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M9 / M9D
M11 / M11D

-001 thru -019

Self-Contained Steam Sterilizer

To purchase a printed copy of this manual,
click on the "Place Order" button below.

Place Order

Serial Number Prefixes:
M9 [CZ, DA, DB, DX, DY, FK, LA, FL, OM]
M9D [FF, FG]
M 11 [ES, ET, FP, FR, GB. NP]
M11D [GC, GD]

NO LONGER IN PRODUCTION
Some service parts may not be available for this product!

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

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NOTE: *The Parts List in this manual is divided into two sections [**M9 / M9D** & **M11/M11D**]. Verify model and refer to appropriate section.*

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IMPORTANT INSTRUCTIONS

General Safety Instructions

Safety First: The primary concern of Midmark Corporation is that this sterilizer is maintained with the safety of the patient and staff in mind. To assure that services and repairs are completed safely and correctly, proceed as follows:

(1) Read this entire manual before performing any services or repairs on this sterilizer.

(2) Be sure you understand the instructions contained in this manual before attempting to service or repair this sterilizer.

Safety Alert Symbols

Throughout this manual are safety alert symbols that call attention to particular procedures. These items are used as follows:

DANGER

A DANGER is used for an imminently hazardous operating procedure, practice, or condition which, if not correctly followed, will result in loss of life or serious personal injury.

WARNING

A WARNING is used for a potentially hazardous operating procedure, practice, or condition which, if not correctly followed, could result in loss of life or serious personal injury.

CAUTION

A CAUTION is used for a potentially hazardous operating procedure, practice, or condition which, if not correctly followed, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

EQUIPMENT ALERT

An EQUIPMENT ALERT is used for an imminently or potentially hazardous operating procedure, practice, or condition which, if not correctly followed, will or could result in serious, moderate, or minor damage to unit.

NOTE

A NOTE is used to amplify an operating procedure, practice or condition.

Warranty Instructions

Refer to the Midmark "Limited Warranty" printed in the Installation and Operation Manual for warranty information. Failure to follow the guidelines listed below will void the warranty and/or render the M9 sterilizer unsafe for operation.

- In the event of a malfunction, do not attempt to operate the sterilizer until necessary repairs have been made.
- Do not attempt to disassemble sterilizer, replace malfunctioning or damaged components, or perform adjustments unless you are one of Midmark's authorized service technicians.
- Do not substitute parts of another manufacturer when replacing inoperative or damaged components. Use only Midmark replacement parts.

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SECTION I
GENERAL INFORMATION

1.1 Model / Serial Number Location

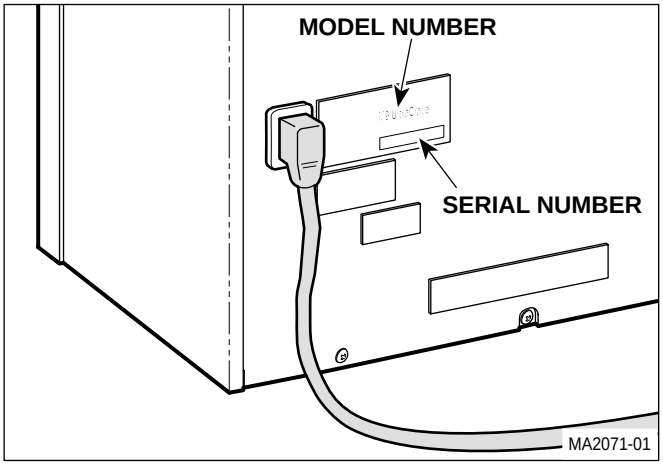

Figure 1-1. Model / Serial Number Location

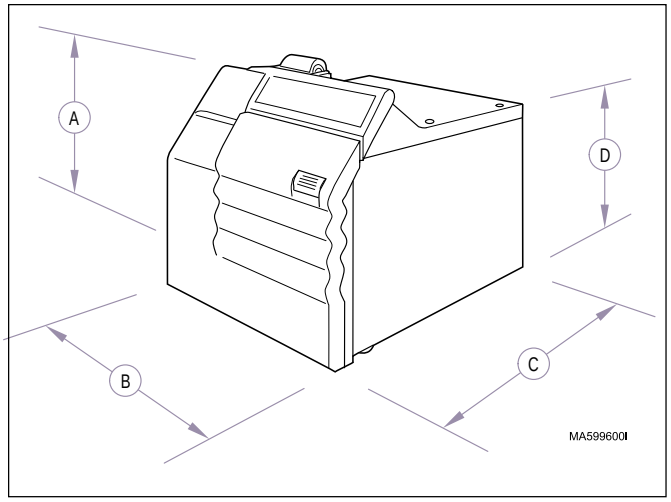

Figure 1-2. Dimensions

1.2 Specifications

Table 1-1. Specifications

Description	Data
M9 / M9D Dimensions:	
Front Height (A, Figure 1-2)	16.4 in (41.8 cm) *(printer adds approx. 0.5 in)*
Width (B)	15 in (38.1 cm)
Depth (C)	18.1 in (47.8 cm)
Back Height (D)	13.75 in (34.9 cm)
Chamber Diameter	9 in. (22.8 cm)
Chamber Depth	15 in. (38.1 cm)
Shipping Carton	22 in x 17.75 in x 18 in (56 cm x 45 cm x 46 cm)
Weight:	
Reservoir Empty	70 lb (32 kg)
Reservoir Full	77 lb (35 kg)
With Shipping Carton	78 lb (36 kg)
Water Reservoir Capacity	Approx. 7/8 gallon (3.31 Liters to full mark)

Description	Data
M11 / M11D Dimensions:	
Front Height (A, Figure 1-2)	17.7 in (44.9 cm) *(printer adds approx. 0.5 in)*
Width (B)	17.6 in (44.8 cm)
Depth (C)	22.4 in (56.8 cm)
Back Height (D)	15.25 in (38.7 cm)
Chamber Diameter	11 in. (27.9 cm)
Chamber Depth	18 in. (45.7 cm)
Shipping Carton	23 in x 27.5 in x 21.5 in (58.4 cm x 69.8 cm x 54.6 cm)
Weight:	
Reservoir Empty	96 lb (43.5 kg)
Reservoir Full	106 lb (48 kg)
With Shipping Carton	128 lb (58 kg)
Water Reservoir Capacity	Approx. 1.25 gallon (4.7 Liters) to full mark

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SECTION I
GENERAL INFORMATION

NOTE
The following information applies to all models of the M9 / M9D / M11 / M11D included in this manual.

Table 1-1. Specifications - *continued*

Description	Data
M9 / M9D / M11 / M11D	
Electrical Requirements:	
100 VAC Unit	100 VAC 50 - 60 HZ, 15 amp, single phase
115 VAC Unit	110 - 120 VAC 50 - 60 HZ, 15 amp, single phase
230 VAC Unit	220 - 240 VAC 50 - 60 HZ, 7 amp, single phase
Power Consumption:	
100 VAC Unit	1425 WATTS, 15 amps @ 100 VAC
115 VAC Unit	1425 WATTS, 12 amps @ 120 VAC
230 VAC Unit	1500 WATTS, 7 amps @ 240 VAC
Recommended Circuit:	
A separate (dedicated) circuit is recommended for this sterilizer. The sterilizer *should not* be connected to an electrical circuit with other appliances or equipment unless the circuit is rated for the additional load.	
Chamber Pressure:	
Operating	27 - 31 psi (186 - 215 kPa)
Minimum Before Door Is Released *(M9 & M11 only)*	0.7 psi (5 kPa)
Maximum Before Safety Valve Opens (older units).	35 psi (241 kPa)
Maximum Before Safety Valve Opens (newer units).	40 psi (275.7 kPa)
Chamber Temperature (Operating):	
Unwrapped Cycle	272-273 °F (133-134 °C)
Pouches Cycle	272-273 °F (133-134 °C)
Liquids Cycle	252-253 °F (122-123 °C)
Packs Cycle	252-253 °F (122-123 °C)
Maximum Before Thermostat Energizes	295 °F (146 °C)

1.3 Description of Normal Operation

(Figure 1-3 shows Display Panel Buttons & Lamps)
(Figure 1-4 shows location of Major Components)

Plug Power Cord Into Outlet
Display: *E001 (Error lamp flashes)*

1. Line voltage (100/115/230V) is supplied to Control PC Board.

NOTE
There are two primary fuses on PC Board. Faulty fuse(s) will disable all functions of sterilizer.

Press ON/STANDBY Button
Display: *(Error lamp goes out; ON/STANDBY lamp illuminates, & program lamps flash)*

Select Cycle *(Unwrapped, Pouches, Liquids, Packs)*
Display: *TIME/TEMP. (for the selected cycle)*

Press START Button

NOTE
After the START button is pressed, the PC board continuously monitors the Door Switch for continuity. If continuity is not detected, the PC board stops the cycle, and the Door Ajar lamp illuminates.

1. The Fill Cycle is initiated.

Fill Cycle
Display: *(Filling lamp illuminates)*

1. Line voltage from PC Board energizes Fill Solenoid; this allows water to flow into Pressure Vessel.

2. Water fills Pressure Vessel until it makes contact with the Pressure Vessel Water Level Sensor.

3. When water completes the ground circuit between the Pressure Vessel Water Level Sensor & the chassis, the PC Board de-engergizes the Fill Solenoid & the Steriliation Cycle is initiated.

Sterilization Cycle
Display: *(Sterilizing lamp illuminates)*
xxx° (chamber temperature)
xx PSI [after temperature reaches 208°F (98°C)]

NOTE
During the Sterilization Cycle, the Temperature Probe monitors the chamber temperature and the PC Board monitors chamber pressure.

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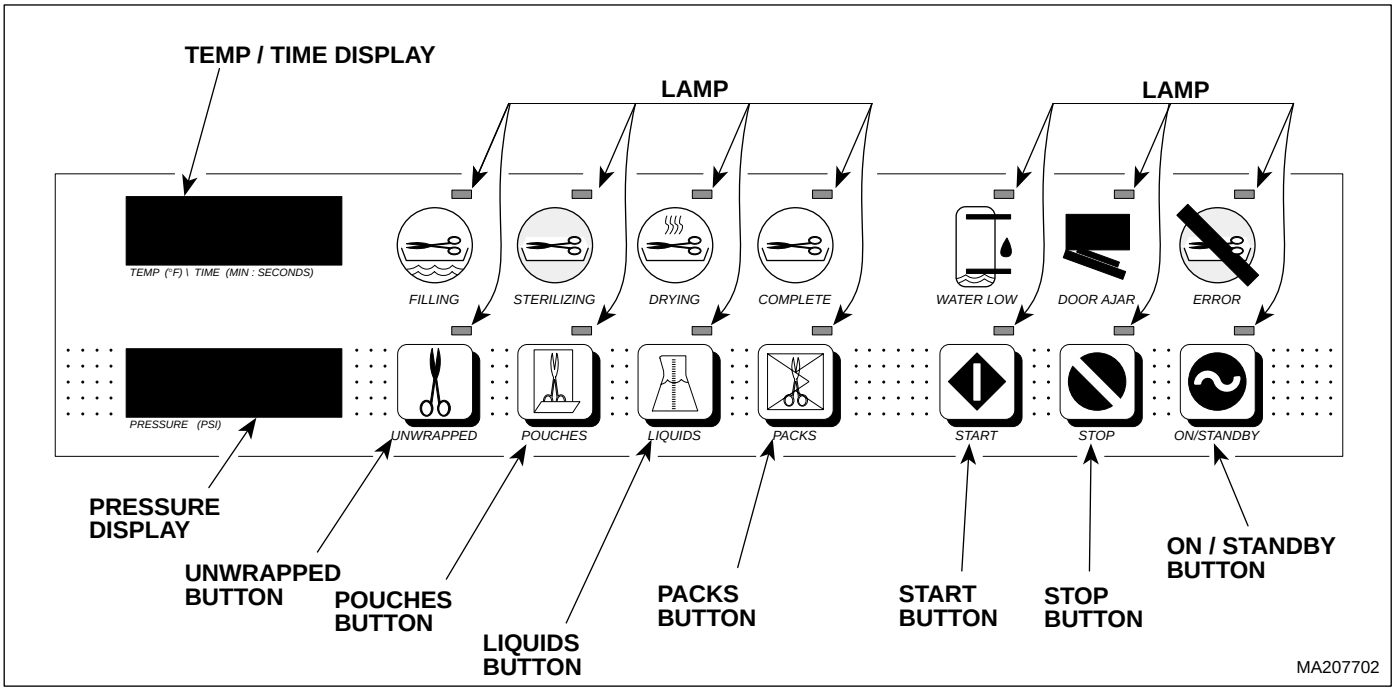

Figure 1-3. Display Panel Button / Lamp Locations

Sterilization Cycle - *continued*

1. Line voltage from PC Board energizes Heating Element.
2. Air & steam flow thru Bellows as water in chamber begins to boil. When temperature reaches approx. 215° F (101° C), the Bellows closes and pressure begins to build.
3. When chamber reaches required temperature, Heating Element is de-energized and sterlization time begins to count down on Display PC Board.
4. Line voltage from PC Board energizes Heating Element intermittantly to maintain required temperature & pressure until time elapses.
5. When sterilization time expires, the Heating Element de-energized & the Vent Cycle is initiated.

Vent Cycle

1. Line voltage from PC Board energizes Vent Solenoid. *[Liquids Cycle requires chamber to cool to 223° F (106° C) before Vent Solenoid is energized]*
2. Chamber pressure is released thru Vent Solenoid until pressure drops to 0.7 psi (4.8 kPa).
3. Control PC Board sounds 5 beeps.
4. M9 / M11: Line voltage from PC Board energizes Pulse Solenoid.
   Door opens automatically.
   Drying Cycle is initiated.

   M9D / M11D: "Open the Door" Lamp illuminates.
   "dddd" appears on Display PC Board.
   Manually open door at this time.
   Drying Cycle is initiated.

Drying Cycle

Display: *(Drying lamp illuminates)*
xx:xx (time counts down from 30 minutes)
(Complete lamp illuminates at end of cycle)

1. Line voltage energizes Heating Element for 45 seconds. (30 minute countdown begins on Display PC Board).
2. Heating Element is energized intermittantly *(as shown below)* until Dry Cycle is complete.

   45 seconds ON - 2 minutes OFF
   30 seconds ON - 2 minutes OFF
   xx* seconds ON - 2 minutes OFF (until cycle ends)

   **This time is adjustable. Refer to adjustment procedure in Section IV if necessary.*

SECTION I
GENERAL INFORMATION

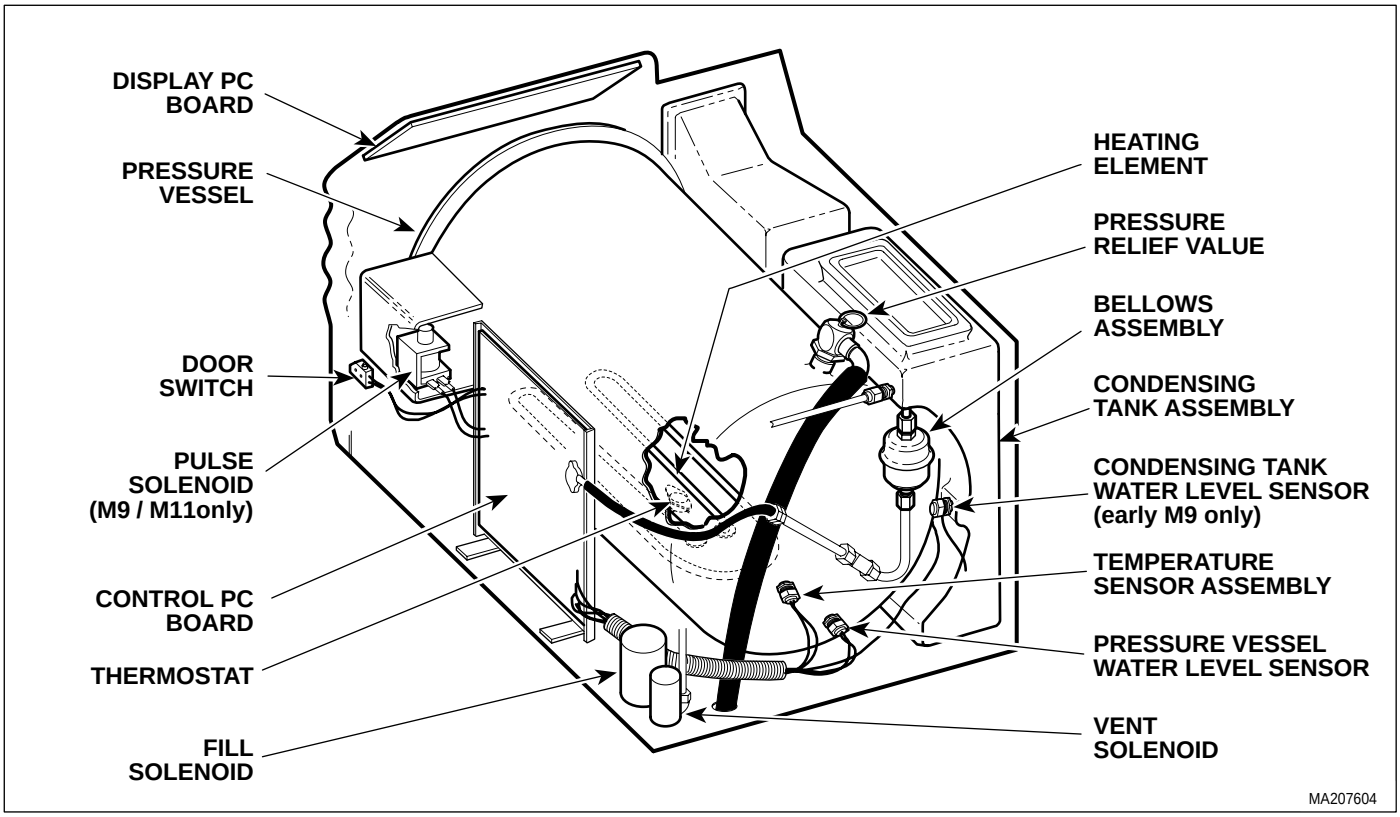

Figure 1-4. Major Components

1.4 Ordering Parts

Contact Midmark's Technical Service Department with all necessary information (model / serial number, part number, etc.).

Orders can be placed using the Fax Order Form (page 7-2) or by calling the phone number on the back cover of this manual.

1.5 Special Tools

Special tools needed to repair the sterilizer are listed below in Table 1-2.

Table 1-2. Special Tool List

Description of Special Tool	Manufacturer's Name / Address / Phone	Manufacturer's Part Number	Purpose of Special Tool
Digital Multimeter (must be capable of displaying 3 digits)	Commercially Available	Any Type	Used to check probes, switches, and connections for proper function by performing continuity checks.
Water Level Sensor Wrench	Midmark Corp. 60 Vista Drive Versailles, Ohio 45380 (513) 526-3662	050-2324-00	Used to hold fitting in place so the nut that holds water level sensor can be loosened / tightened.
3/32 in. Diameter Punch	Commercially Available	Any Type	Used to remove / install two roll pins which secure door switch in place or roll pin which secures latch lever to pulse solenoid.
Pressure Gauge Test Harness	Midmark Corp. 60 Vista Drive Versailles, Ohio 45380 (513) 526-3662	002-0372-00	Used to check the pressure in the pressure vessel during a cycle to diagnose malfunctions and / or adjust the pressure range potentiometer to a correct setting.

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SECTION II
TESTING AND TROUBLESHOOTING

2.1 Operational Test

To effectively diagnose a malfunction of the sterilizer, perform the Pressure / Temperature Potentiometers Adjustment procedure. Refer to para 4.24.

2.2 Troubleshooting Procedures

If a malfunction is detected, locate the **Problem & Symptom** in Table 2-1. Perform the **Check** for each **Probable Cause** indicated. Follow instructions in the **Correction** column as they apply.

Table 2-1. Troubleshooting Guide

Problem	Symptom	Probable Cause	Check	Correction
Error code 1 (Power interruption to control PC board).	Shuts down during Sterilization cycle.	Overheat thermostat activated. (Pressure leak)	Check for pressure leaks. Refer to Table 2-2.	Replace malfunctioning component at pressure leak.
		Overheat thermostat activated. (Not filling properly)	Check that Filling lamp illuminates. Be sure water level sensor is dry.	Replace water level sensor if necessary. Refer to para 4.10.
			Check that sterilizer is level.	Adjust sterilizer to level.
		Bad electrical connection(s).	Check sterilizer and facility for proper electrical connections.	Tighten / replace loose connections.
		Faulty overheat thermostat. (stuck open)	Perform continuity check on thermostat (N.C.).	Replace thermostat. Refer to para 4.16.
	Shuts down during Drying cycle.	Overheat thermostat activated. (High input voltage)	Check facility input voltage. Voltage should not exceed Electrical Requirements as noted in para 1.2.	Adjust the dry cycle time dip switches. Refer to para 4.27.
			Check resistance of heating element. Refer to para 5.1 for normal resistance ranges.	If resistance is out of limits, replace heating element. Refer to para 4.18.
		Faulty overheat thermostat. (stuck open)	Perform continuity check on thermostat (N.C.).	Replace thermostat. Refer to para 4.16.
Error code 2 (Stop Button pressed during cycle)	Shuts down during cycle.	Stop Button pressed during cycle.	_	Restart cycle after beeper signal stops.
Error code 3 (ON / Standby Button pressed during cycle)	Shuts down during cycle	On / Standby Button pressed during cycle.	_	Restart cycle after beeper signal stops.
Error code 4 (Door Ajar)	Shuts down during cycle	Door latch not closed.	Check if door latch is engaging switch.	Adjust door latch. Clean/lubricate door latch and pins.
		Door switch connection loose.	Check door switch connection.	Tighten / replace loose connections.
		Door switch malfunctioning.	Perform continuity check on door switch (N.O.).	Replace door switch. Refer to para 4.14.

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Table 2-1. Troubleshooting Guide - *continued*

Problem	Symptom	Probable Cause	Check	Correction
Error code 5 [Display pressure exceeded 35 psi (241 kPa)]	Shuts down during Strerilization cycle	Sterilizer overloaded.	Check that pressure vessel is not overloaded with heavy linen packs.	Instruct operator to reduce load size.
		Bellows malfunctioning. (closing early)	Bellows should close at approx. 212° F (100° C).	Replace bellows. Refer to para 4.7.
		Sterilizer potentiometers out of calibration and/or dirty temperature sensor.	Clean temperature sensor; then check calibration of using Pressure Gauge Test Harness.	Perform Temperature / Pressure Potentiometer Adjustment. Refer to para 4.24.
		Temperature sensor malfunctioning.	Check calibration.	Replace temperature sensor assembly. Refer to para 4.9.
Error code 6 [Display temperature exceeded 277°F (136°C)]	Shuts down during Strerilization cycle	Slow pressure leak.	Check for pressure leaks. Refer to Table 2-2.	Replace malfunctioning component at pressure leak.
		Sterilizer potentiometers out of calibration and/or dirty temperature sensor.	Clean temperature sensor; then check calibration of using Pressure Gauge Test Harness.	Perform Temperature / Pressure Potentiometer Adjustment. Refer to para 4.24.
		Temperature sensor malfunctioning.	Check calibration.	Replace temperature sensor assembly. Refer to para 4.9.
Error code 7 [Display pressure dropped below 24.5 psi (169 kPa)]	Shuts down during Strerilization cycle	Slow pressure leak.	Check for pressure leaks. Refer to Table 2-2.	Replace malfunctioning component at pressure leak.
		Sterilizer potentiometers out of calibration and/or dirty temperature sensor.	Clean temperature sensor; then check calibration of using Pressure Gauge Test Harness.	Perform Temperature / Pressure Potentiometer Adjustment. Refer to para 4.24.
		Temperature sensor malfunctioning.	Check calibration.	Replace temperature sensor assembly. Refer to para 4.9.

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Table 2-1. Troubleshooting Guide - *continued*

Problem	Symptom	Probable Cause	Check	Correction
Error code 8 ***- M9 & M11 only*** [Door switch did not change status after door solenoid was activated.	Door opens at end of cycle.	Door switch malfunctioning.	Perform continuity check on door switch. Check for loose connections.	Replace door switch. Refer to para 4.14.
	Door does not open at end of cycle.	Latch lever & pulse solenoid plunger mechanism malfunctioning.	Perform M9/M11 Door Opening Test. Refer to para 4.28.	Remove any debris or buildup from latch lever & pulse solenoid mechanism.
		Door pins and latch bracket not functioning properly.	Check for burrs on door pins and latch bracket in door.	Remove burrs; then clean and lube with lithium based grease.
		Zero pressure potentiometer out of calibration.	Check calibration of zero pressure potentiometer.	Adjust zero pressure potentiometer. Refer to para 4.24.
		Pulse solenoid malfunctioning.	Perform M9/M11 Door Opening Test. Refer to para 4.28.	Replace pulse solenoid. Refer to para 4.15.
Error code 9 [Pressure exceeded 0.9 psi (6.2 kPa) during Dry cycle]	***M9/M11*** - Door opens at end of cycle. ***M9D/M11D*** - Door is manually opened at end of cycle	Zero pressure potentiometer out of calibration.	Check calibration of zero pressure potentiometer.	Adjust zero pressure potentiometer. Refer to para 4.24.
	M9/M11 - Door does not open at end of cycle.	Latch lever & pulse solenoid plunger mechanism malfunctioning.	Perform M9/M11 Door Opening Test. Refer to para 4.28.	Remove any debris or buildup from latch lever & pulse solenoid mechanism.
		Door pins and latch bracket not functioning properly.	Check for burrs on door pins and latch bracket in door.	Remove burrs; then clean and lube with lithium based grease.
		Zero pressure potentiometer out of calibration.	Check calibration of zero pressure potentiometer.	Adjust zero pressure potentiometer. Refer to para 4.24.
	Door is closed when error is detected.	Door was closed during Dry cycle.	-	Inform operator not to shut door during Dry cycle.

Table 2-1. Troubleshooting Guide - *continued*

Problem	Symptom	Probable Cause	Check	Correction
Error code 10 (Watchdog timer reset error)	Sterilizer does not complete cycle.	Control PC board has had a software / hardware failure.	DIsconnect power; then check for disconnected wiring in sterilizer or facility. Connect power & run additional cycle.	If error code persists, replace control PC board. Refer to para 4.13.
Error code 11 (Software interrupt error)	Sterilizer does not complete cycle.	Control PC board has a software / hardware malfunction.	Disconnect power for approx. 10 seconds; then connect power & run additional cycle.	If error code persists, replace control PC board. Refer to para 4.13.
Error code 12 (Ram test error)	Sterilizer does not complete cycle.	Control PC board has a software / hardware malfunction.	Disconnect power for approx. 10 seconds; then connect power & run additional cycle.	If error code persists, replace control PC board. Refer to para 4.13.
Error code 13 ***-M9D & M11D only*** (Door switch status unchanged since last cycle)	Sterilizer does not complete cycle.	Door switch is malfunctioning.	Perform continuity check on door switch.	Replace door switch. Refer to para 4.14.
Blown Fuses	Main fuse on PC board blown	Short in pulse solenoid.	Unplug pulse solenoid; then run M9/M11 Door Opening Test. Refer to para 4.28.	Replace pulse solenoid. Refer to para 4.15.
No Display Lights	Unit displays temp. & pressure, but does not show LED status lights.	-	-	Disconnect power for approx. 30 seconds. Then connect power and check for proper operation.
Low Water Light ***(comes on after approx. 5 min.)***	Water continuously fills chamber.	Water level sensor dirty or malfunctioning.	Clean water level sensor; then perform continuity check.	Replace water level sensor. Refer to para 4.10.
		Temperature sensor malfunctioning.	Disconnect temp. sensor from PC board; then check for proper operation.	Replace temperature sensor. Refer to para 4.9.
	Water is not entering chamber.	Filter is dirty/clogged.	Clean filter with speedclean & brush or in ultrasonic cleaner.	Replace filter if necessary. Refer to para 4.19.
		Debris trapped in fill solenoid.	Disassemble fill solenoid and remove any debris.	Replace fill solenoid. Refer to para 4.12.
Low Water Light ***(comes on immediately)*** (Older-style units only)	Low water light illuminates as soon as cycle is started.	Condensing tank level sensor malfunctioning.	-	Unplug sensor from PC board & permanantely jumper connection on board.

Table 2-1. Troubleshooting Guide - *continued*

Problem	Symptom	Probable Cause	Check	Correction
Sterilizer has no power.	No response when ON/STANDBY is pushed (no lamps illuminate).	Sterilizer is not plugged in.	Check that power cord is plugged in to sterilizer and outlet.	Plug in power cord to sterilizer or outlet.
		Fuse blown on control PC board.	Perform continuity check on control PC board fuses.	Replace fuses.
		Thermostat activated.	Check for voltage at input to control PC board from thermostat.	Wait for sterilizer to cool. Re-check voltage. If none, replace thermostat. Refer to para 4.16.
Fill cycle malfunction.	Unit skips fill cycle.	Water level sensor wet from previous cycle.	-	Allow pressure vessel water level sensor to air dry or remove and hand dry. Refer to para 4.10.
	Chamber fills very slowly.	Filter / tubing plugged.	Remove filter and tubing and inspect.	Replace / clean filter and/or tubing. Refer to para 4.19.
		Pressure vessel water level sensor malfunctioning or dirty.	Unplug sensor from PC board & jumper connection on board. Check for proper operation.	Replace/clean pressure vessel water level sensor. Refer to para 4.10.
	Chamber overfills with water.	Pressure vessel water level sensor malfunctioning or dirty.	Unplug sensor from PC board & jumper connection on board. Check for proper operation.	Replace/clean pressure vessel water level sensor. Refer to para 4.10.
		Loose, broken, or dirty connection between pressure vessel water level sensor and control PC board.	Perform continuity check between connector and pressure vessel water level sensor.	Replace/clean broken wires or connections.
		Sterilizer is not level.	Check sterilizer for level installation.	Re-install sterilizer on a level surface, adjust height of individual foot levelers, or shim up sterilizer.
		Ground screw on PC board missing.	Check PC board ground screw.	Replace ground screw.
		Temperature sensor malfunctioning.	Unplug temperature sensor from PC board then check for proper operation.	Replace temperature sensor. Refer to para 4.9.
		Fill solenoid malfunctioning or stuck.	Check resistance of solenoid. Refer to Section 5.	Replace / clean fill solenoid. Refer to para 4.12.
		Control PC board malfunctioning.	Check all **Probable Causes** listed above.	Replace control PC board. Refer to para 4.13.

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Table 2-1. Troubleshooting Guide - *continued*

Problem	Symptom	Probable Cause	Check	Correction
Door does not open after vent cycle. ***- M9 / M11 only***	Pulse solenoid energizes, but door does not open.	Latch lever binding.	Operate latch lever by hand to check for resistance.	Clean / lubricate latch lever.
		Door latch binding.	Operate door latch by hand to check for resistance.	Clean / lubricate door latch.
		Tray rack not pushed in all the way into chamber, causing interference with door.	Check to see if tray rack is installed properly so that is does not interfere with door.	Install tray rack properly so that it does not interfere with door.
		Pressure zero potentiometer out of calibration.	-	Adjust pressure zero potentiometer. Refer to para 4.24.
Chamber does not vent properly.	Door opens after a longer than normal venting period. ***- M9 / M11*** OPEN THE DOOR lamp illuminates after longer than normal venting period. ***- M9D / M11D***	Drain, filter, or vent tubing plugged.	Remove filter and tubing and inspect.	Clean, drain, and flush tubing. Replace/clean filter. Refer to para 4.19.
		Vent solenoid malfunctioning or stuck.	Check resistance of solenoid coil. Refer to Section 5.	Replace/clean vent solenoid. Refer to para 4.11.
Temperature does not go above 215°F (101°C).	Unit will not complete sterilization cycle.	Slow pressure leak.	Check for pressure leaks. Refer to Table 2-2.	Replace malfunctioning component at pressure leak.
Instruments not drying.	Instruments are wet after drying cycle is complete.	Door is not opening at end of vent portion of cycle.	See **Problem**: *Door does not open after vent cycle*.	
		Sterilizer is not level.	Check sterilizer for level installation.	Re-install sterilizer on a level surface, adjust height of individual foot levelers, or shim up sterilizer.
		Filter is plugged.	Check that no water is left in pressure vessel after venting portion of cycle.	Replace/clean filter. Refer to para 4.19.

Table 2-1. Troubleshooting Guide - *continued*

Problem	Symptom	Probable Cause	Check	Correction
OPEN THE DOOR lamp does not illuminate. ***- M9D / M11D only***	OPEN THE DOOR lamp does not illuminate at the end of sterlization cycle.	Pressure potentiometer out of adjustment	Display PC board check will show zero pressure setting. Refer to para 4.25.	Adjust pressure potentiometer. refer to para 4.24.
Code "C001" ***-M9D & M11D only*** (Low water error)	Cycle will not run.	Water level in condensing tank is too low.	Check water level in condensing tank.	Fill condensing tank with distilled water.
	Cycle will not run. Condensing tank is full.	Fill solenoid malfunctioning or stuck.	Check resistance of solenoid. Refer to Section 5.	Replace fill solenoid. Refer to para 4.12.
		Water level sensor dirty or malfunctioning.	Clean water level sensor; then perform continuity check.	Replace water level sensor. Refer to para 4.10.
	Chamber overfills with water.	Temperature sensor malfunctioning.	Disconnect temperature sensor; then check for proper operation.	Replace temperature sensor. Refer to para 4.9.
Code "C002" ***-M9D & M11D only*** (Door ajar)	Cycle will not run.	Door ajar.	-	Close door.
Code "C003" ***-M9D & M11D only*** (Dry cycle error)	Dry cycle did not start.	Door was not opened within 30 minutes after venting.	-	Rerun cycle. Open door within 30 minutes after venting.

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2.3 Areas To Check For Pressure Leaks *(Figure 2-1)*

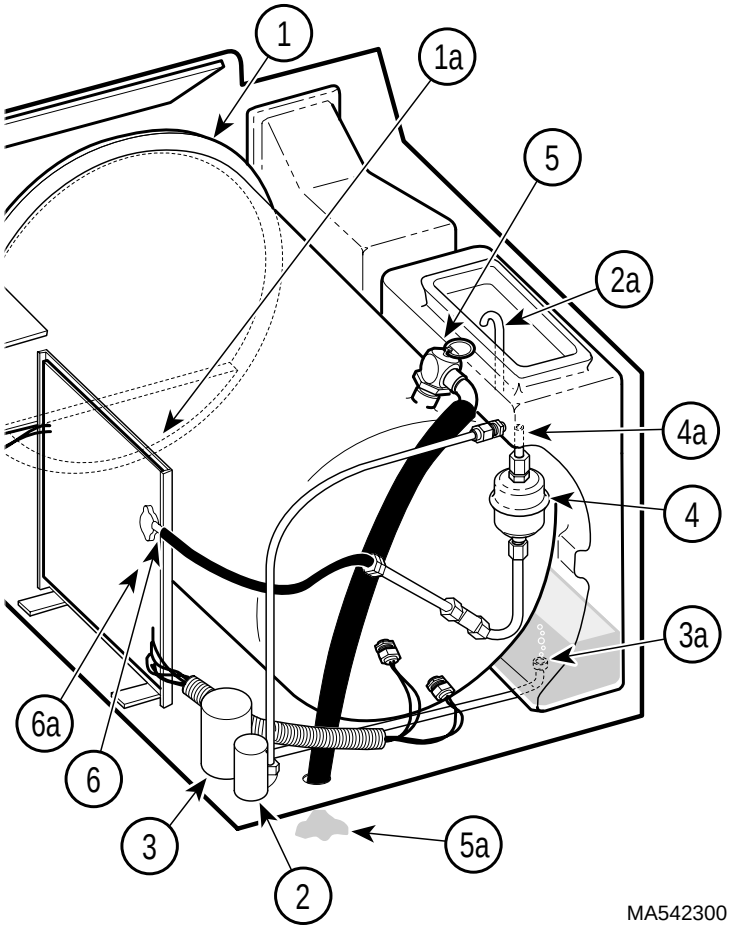

Table 2-2. Areas To Check For Pressure Leaks

Component	Check	Correction
Door Gasket ***(1, Figure 2-1)***	Check for water leaking around door. ***See (1a)***.	Replace door gasket. Refer to para 4.20.
Vent Solenoid (2)	Check for water leaking thru condensing coil. ***See (2a).***	Replace vent solenoid. Refer to para 4.11.
Fill Solenoid (3)	Check for water leaking back into reservoir thru fill line, raising reservoir water level. ***See (3a).***	Replace fill solenoid. Refer to para 4.12.
Bellows (4)	Check for excessive steam from bellows line in reservoir. NOTE: a light hiss of steam is not uncommon. ***See (4a).***	Replace bellows. Refer to para 4.7.
Pressure Relief Valve (5)	Check for water leaking beneath back of sterilizer. NOTE: check actual pressure before replaceing pressure relief valve. ***See (5a).***	Replace pressure relief valve. Refer to para 4.23.
Pressure Sensor Hose (6)	Check for steam leak onto main PC board. ***See (6a).***	Secure pressure sensor hose to PC board with cable tie.

SECTION III
SCHEDULED MAINTENANCE

3.1 Scheduled Maintenance

Table 3-1 lists inspections and services that should be performed periodically on the sterilizer.

Table 3-1. Scheduled Maintenance Chart

Interval	Inspection or Service	What to Do
Semi-annually	Obvious damage	Visually check condition of sterilizer for obvious damage such as: cracks in components, missing components, dents in components, leaks, or any other visible damage which would cause sterilizer to be unsafe to operate or would compromise the performance of the sterilizer. Repair sterilizer if necessary.
	Fasteners/hardware	Check sterilizer for missing or loose fasteners/hardware. Replace any missing hardware and tighten any loose hardware as necessary using Loctite 271 if necessary.
	Moving parts	All moving parts should be lubricated with high temperature grease.
	Warning and instructional decals	Check for missing or illegible decals. Replace decals as necessary.
	Display overlay	Check for missing, damaged, or illegible display overlay. Replace display overlay if necessary.
	Wiring connections	Check the integrity of all wiring connections. Clean all dirty connections. Tighten any loose connections. Replace any damaged connections.
	Free movement of door latch	Clean door latch. Lubricate door latch and door pins with high temperature grease.
	Free movement of door switch spring	Clean door switch spring. Lubricate door switch spring with high temperature grease. Replace door switch spring if necessary.
	Latch lever (M9 / M11 only)	Operate latch lever by hand to check for resistance. Clean latch lever. Lubricate latch lever with high temperature grease.
	Door and Dam gaskets	Remove gaskets and check for dirt on gaskets, deterioration of gaskets, or voids in gaskets. Clean gaskets using a mild soap and water solution. Replace gaskets if necessary. Refer to para 4.20.
	Filter	Clean filter using a mild soap and water solution. Replace filter if necessary. Refer to para 4.19.
	Pressure vessel water level sensor	Remove any build-up from pressure vessel water level sensors. Replace sensor if necessary. Refer to para 4.10.
	Condensing tank water level sensor (early units only)	Remove any build-up from condensing tank water level sensor. Replace sensor if necessary. Refer to para 4.8.
	Tubing	Remove tubing and inspect for buildup. Clean, drain, and flush tubing. Replace tubing if necessary.
	Display PC board	Perform the display PC board lamp/display/button check. Refer to para 4.25. Replace display PC board if necessary.
	Pressure relief valve	Perform a pressure relief valve check. Refer to para 4.26. Replace pressure relief valve if necessary. Refer to para 4.23.
	Printer (optional equipment)	Check that printer prints properly. Replace ribbon cartridge if necessary. Replace printer if necessary.
	Operational test	Perform an operational test to determine if the sterilizer is operating within its specifications (Refer to para 2.1). Replace any malfunctioning components. Adjust the control PC board potentiometers if necessary. Refer to para 4.24.

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SECTION IV
MAINTENANCE / SERVICE INSTRUCTIONS

4.1 Safety Precautions

WARNING
Always disconnect the power cord from the outlet before removing any of the sterilizer covers/panels or making any repairs to prevent the possibility of electrical shock. Also, drain the sterilizer to prevent spills during repairs. Failure to comply with these instructions could result in serious personal injury or death.

4.2 Top Cover Removal / Installation

A. Removal

(1) Disconnect power cord from the outlet.

(2) If the sterilizer contains a printer, remove printer (Refer to Operation Manual).

(3) Open sterilizer door.

(4) Remove two screws (1, Figure 4-1) and steam block (2) from top cover (3).

(5) Remove four screws (4) and two screws (5) from top cover (3).

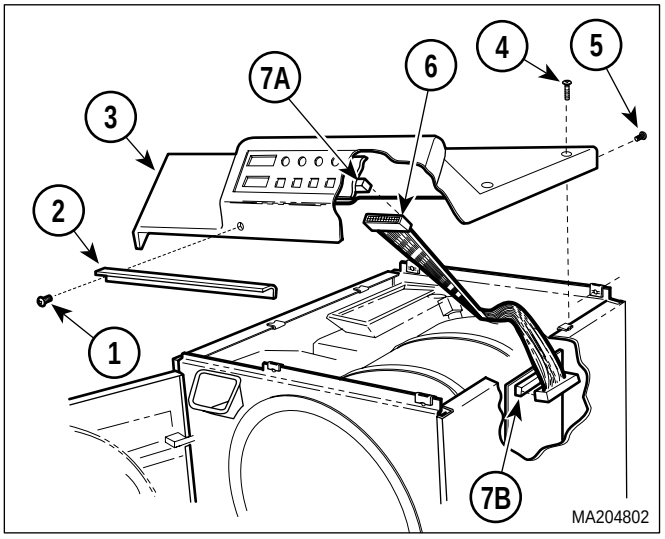

Figure 4-1. Top Cover Removal / Installation

(6) On units which apply, carefully break front of top cover (3) loose from silicone sealant.

EQUIPMENT ALERT
Lift top cover carefully and slowly. Ribbon connector is still connected to display PC board and any excess pressure exerted on it could result in a damaged ribbon connector or display PC board.

(7) Lift rear of top cover (3) and disconnect ribbon connector (6) from display PC board (7A) or control PC board (7B) (depending on whether ribbon connector (6) is part of display PC board or is a separate component).

(8) Remove top cover (3) from sterilizer.

B. Installation

(1) Coat mating surfaces of front panel lip and top cover (3) with silicone sealant.

(2) Position top cover (3) over sterilizer, with rear of top cover raised, and connect ribbon connector (6) to display PC board (7A) or control PC board (7B).

(3) Install top cover (3) on sterilizer and secure using two screws (5) and four screws (4).

(4) Install steam block (2) on top cover (3) and secure using two screws (1).

(5) Close sterilizer door.

(6) If the sterilizer contains a printer, install printer (Refer to Operation Manual).

4.3 Right Hand Side Panel Removal / Installation

A. Removal

(1) Disconnect power cord from the outlet.

(2) Remove two screws (1, Figure 4-2) from top cover (2).

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SECTION IV
MAINTENANCE / SERVICE

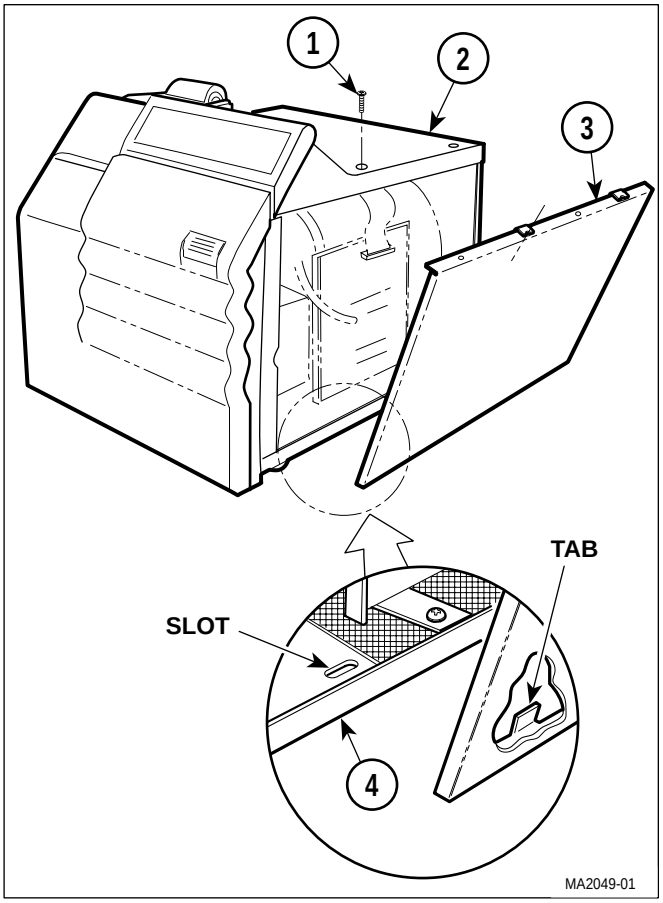

Figure 4-2. Right Hand Side Panel Removal / Installation

(3) Pull outward and down on the top edge of the right hand side panel (3) and remove right hand side panel from sterilizer.

B. Installation

(1) Insert two tabs of right hand side panel (3) into two slots of base (4).

(2) Raise top edge of right hand side panel (3) into position and secure using two screws (1).

4.4 Left Hand Side Panel Removal / Installation

A. Removal

(1) Disconnect power cord from the outlet.

(2) Open sterilizer door.

(3) Remove left screw (1, Figure 4-3) from steam block (2).

(4) Remove two screws (3) from top cover (4).

(5) Lift up the left hand corner of top cover (4), pull outward and down on the top edge of the left hand side panel (5), and remove left hand side panel from sterilizer.

B. Installation

(1) Insert two tabs of left hand side panel (5) into two slots of base (6).

(2) Lift up the left hand corner of top cover (4), raise the top edge of left hand side panel (5) into position, and secure using two screws (3).

(3) Install left screw (1) on steam block (2).

(4) Close sterilizer door.

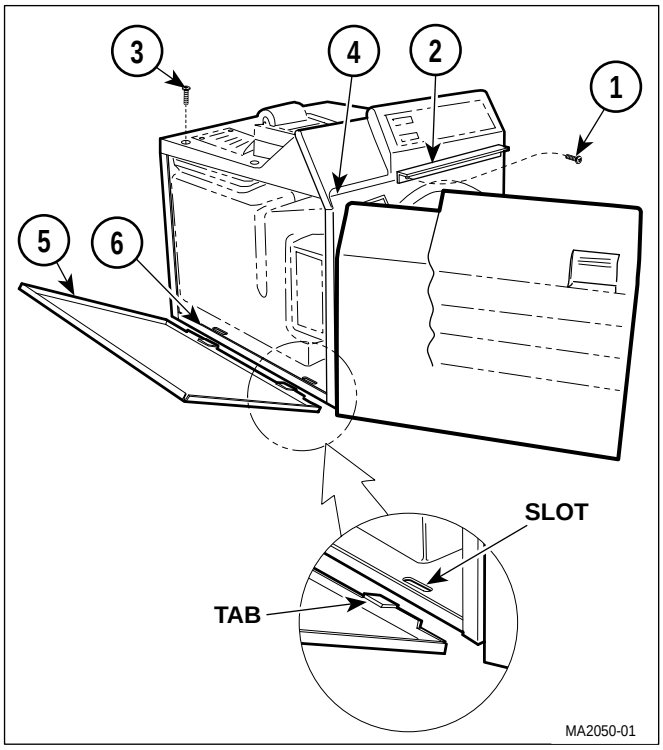

Figure 4-3. Left Hand Side Panel Removal / Installation

4.5 Back Panel Removal / Installation

A. Removal

(1) Disconnect power cord from sterilizer.

(2) Remove right hand side panel (Refer to para 4.3).

(3) Remove left hand side panel (Refer to para 4.4).

(4) Remove four screws (1, Figure 4-4) from back panel (2).

(5) Partially remove back panel (2) by simultaneously pulling downward and outward on back panel.

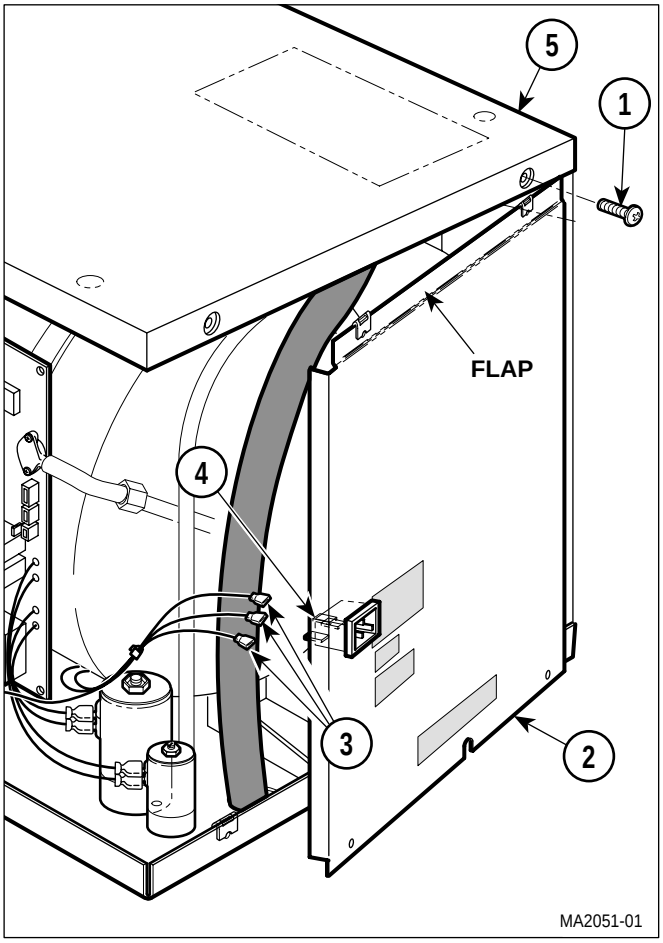

Figure 4-4. Back Panel Removal / Installation

EQUIPMENT ALERT
Ensure that wires are completely disconnected before attempting to remove back panel. Failure to do so could result in damage to sterilizer.

NOTE
Units prior to serial number CZ1110/OM1000 have a fuse holder attached to the back panel. On these sterilizers, tag and disconnect two wires from the receptacle and one wire from the fuse holder instead of performing step 6.

(6) On older units, tag and disconnect three wires (3) from terminals of receptacle (4) and remove back panel (2) from sterilizer. On newer units, separate back panel (2) from unit as far as possible and lay it on its side.

B. Installation

NOTE
Units prior to serial number CZ1110/OM1000 have a fuse holder attached to the back panel. On these sterilizers, remove tags and connect two wires to the receptacle and one wire to the fuse holder instead of performing step 1.

(1) On older units, remove tags and connect three wires (3) to terminals of receptacle (4).

(2) Position flap of back panel (2) behind top cover (5) and secure back panel in place using four screws (1).

(3) Install left hand side panel (Refer to para 4.4).

(4) Install right hand side panel (Refer to para 4.3).

4.6 Base Inspection Cover Removal / Installation

A. Removal

(1) Disconnect power cord from outlet.

(2) Drain water from condensing tank.

(3) Turn sterilizer onto its back.

(4) Remove two screws (1, Figure 4-5) and base inspection cover (2) from base (3).

B. Installation

(1) Install base inspection cover (2) on base (3) and secure using two screws (1).

(2) Turn sterilizer upright.

(3) Refill condensing tank with distilled water.

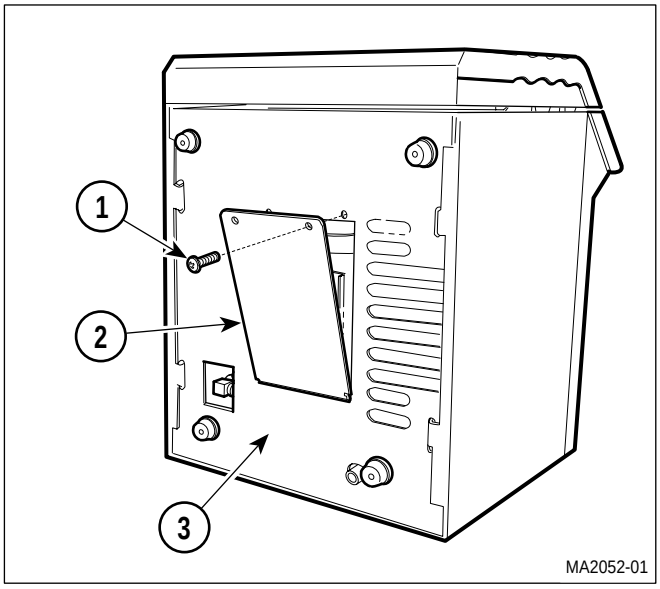

Figure 4-5. Base Inspection Cover Removal / Installation

4.7 Bellows Assembly Removal / Installation

NOTE
Figure 4-6 shows old-style bellows. The procedure for the new-style is the same.

A. Removal

(1) Remove back panel (Refer to para 4.5).

(2) Disconnect tube (1, Figure 4-6) from tee (2).

(3) Pull downward on bellows assembly (3) to remove bellows assembly from condensing tank (4).

(4) Loosen and remove tubes (1 and 5) from bellows assembly (3).

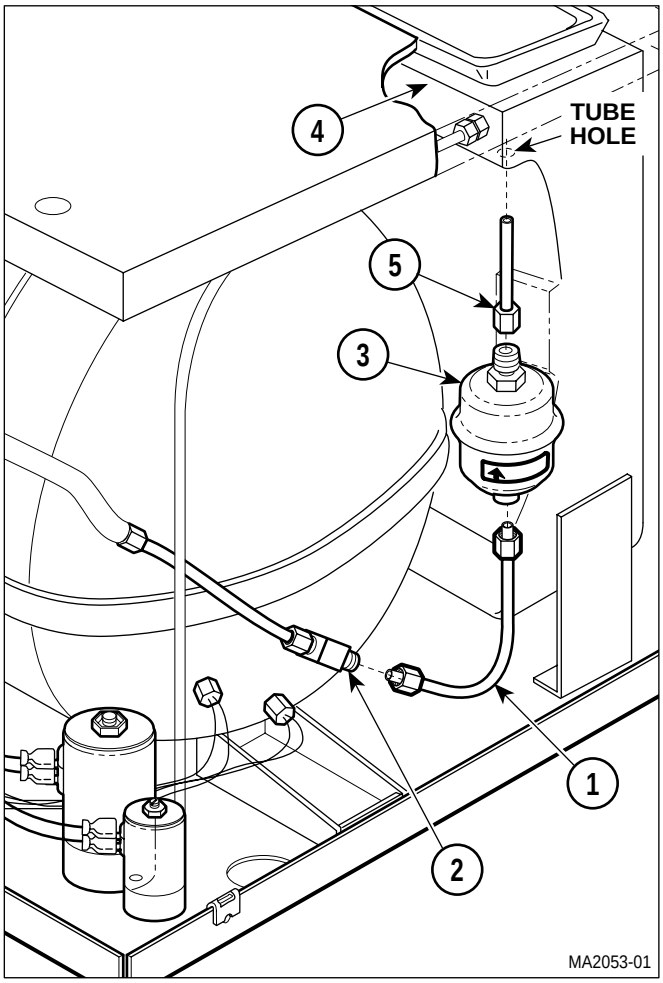

Figure 4-6. Bellows Assembly Removal / Installation

B. Installation

(1) Connect tubes (1 and 5) to bellows assembly (3).

(2) Position bellows assembly (3) and insert tube (5) into tube hole of condensing tank (4).

(3) Connect tube (1) to tee (2).

(4) Install back panel (Refer to para 4.5).

4.8 Condensing Tank Water Level Sensor Removal / Installation (Applies only to Units with old style Control PC Board with EPROM Version M or Before)

NOTE
Units with old style control PC board with EPROM version N or after ***or*** new style control PC board do not have a condensing tank water level sensor.

A. Removal

(1) Drain water from condensing tank.

(2) Remove back panel (Refer to para 4.5).

(3) Remove bellows assembly (Refer to para 4.7).

(4) Disconnect wire (1, Figure 4-7) from termi- nal (2).

(5) Using Water Level Sensor Wrench to hold fitting (3), loosen nut (4) (Refer to Table 1-2 for special tool).

(6) Pull assembled level sensor rod (5) from fitting (3).

(7) Remove nut (4), silicone tube (6), and crimp (7) from level sensor rod (5). Discard silicone tube and crimp.

(8) Using vise grips to hold level sensor rod (5), remove nut (8) and terminal (2) from level sensor rod.

B. Installation

(1) Using vise grips to hold level sensor rod (5), install terminal (2) on level sensor rod and secure using nut (8).

EQUIPMENT ALERT
The end of the silicone tube must extend past nut (4) after nut is installed. If it is not, the level sensor rod will not function properly because the terminal will be in contact with nut (4).

(2) Install crimp (7), nut (4), and silicone tube (6) on level sensor rod (5) and secure by crimping crimp (7).

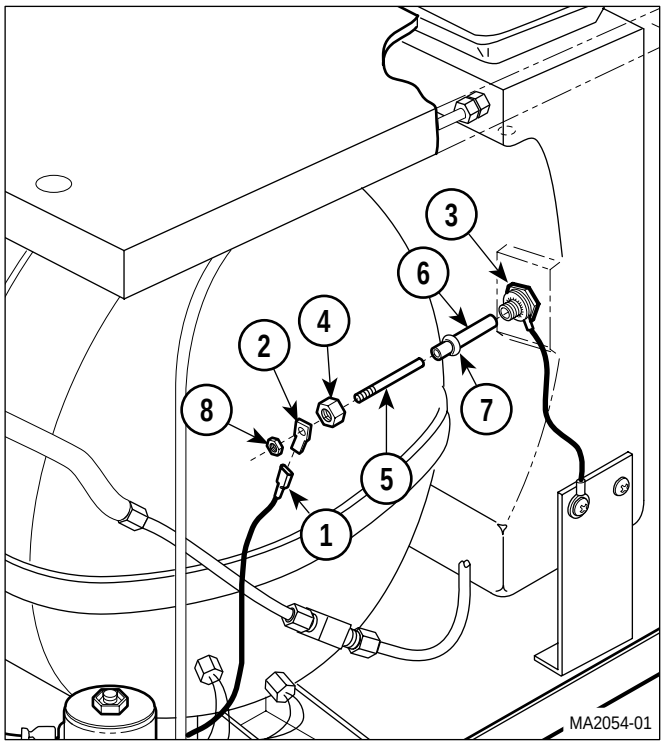

Figure 4-7. Condensing Tank Water Level Sensor Removal / Installation

(3) Install assembled level sensor rod (5) in fit- ting (3).

(4) Using Water Level Sensor Wrench to hold fitting (3), tighten nut (4) (Refer to Table 1-2 for special tool).

(5) Connect wire (1) to terminal (2).

(6) Install bellows assembly (Refer to para 4.7).

(7) Install back panel (Refer to para 4.5).

(8) Refill condensing tank with distilled water.

4.9 Temperature Sensor Assembly Removal / Installation

A. Removal

(1) Remove back panel (Refer to para 4.5).

NOTE
Units with old style control PC board with EPROM version N or after ***or*** new style control PC board will only have two wire harnesses to disconnect instead of three.

(2) Disconnect two / three wire harnesses (1, Figure 4-8) from two / three terminals (2).

(3) Remove flex guard tubing (3) from two / three wire harnesses (1).

(4) Remove temperature sensor assembly (4) from pressure vessel (5).

B. Installation

(1) Coat threads of temperature sensor assembly (4) with teflon tape.

(2) Install temperature sensor assembly (4) in pressure vessel (5).

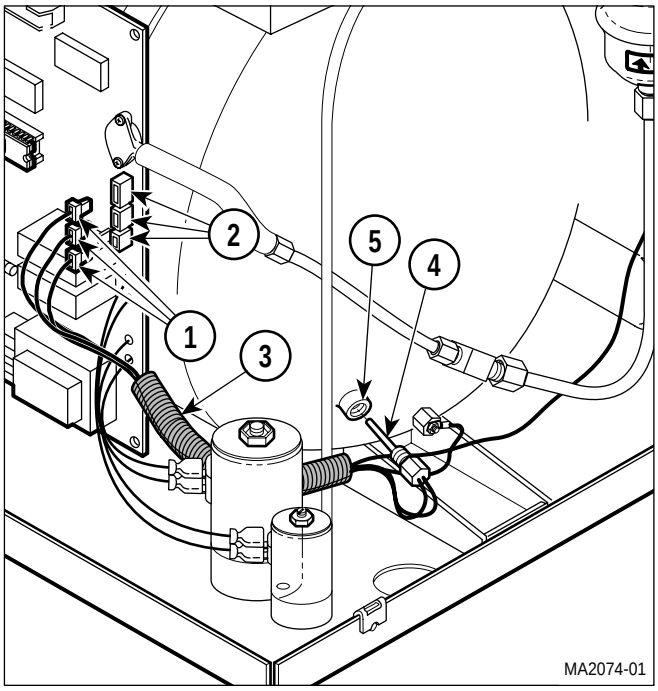

Figure 4-8. Temperature Sensor Assembly Removal / Installation

(3) Install flex guard tubing (3) on three wire harnesses (1).

(4) Connect three wire harnesses (1) to three terminals (2).

(5) Install back panel (Refer to para 4.5).

4.10 Pressure Vessel Water Level Sensor Removal / Installation

A. Removal

(1) Remove back panel (Refer to para 4.5).

(2) Remove wire tray rack and tray plate (Refer to para (4-17).

(3) Disconnect wire (1, Figure 4-9) from termi- nal (2).

(4) Remove nut (3) and terminal (2) from level sensor rod (4).

(5) Remove nut (5).

EQUIPMENT ALERT
Do not try to pull level sensor rod out of back side of pressure vessel. Doing so will damage level sensor rod.

(6) Push level sensor rod (4) thru fitting (6) and into pressure vessel (7) and remove level sensor rod.

(7) Remove spacer (8) from level sensor rod (4).

(8) Remove silicone tube (9) from fitting (6). Discard silicone tube (9) and crimp (10).

(9) If damaged, remove fitting (6) from pressure vessel (7).

B. Installation

(1) If removed, coat fitting (6) with teflon tape and install fitting in pressure vessel (7).

(2) Install silicone tube (9) and spacer (8) on level sensor rod (4).

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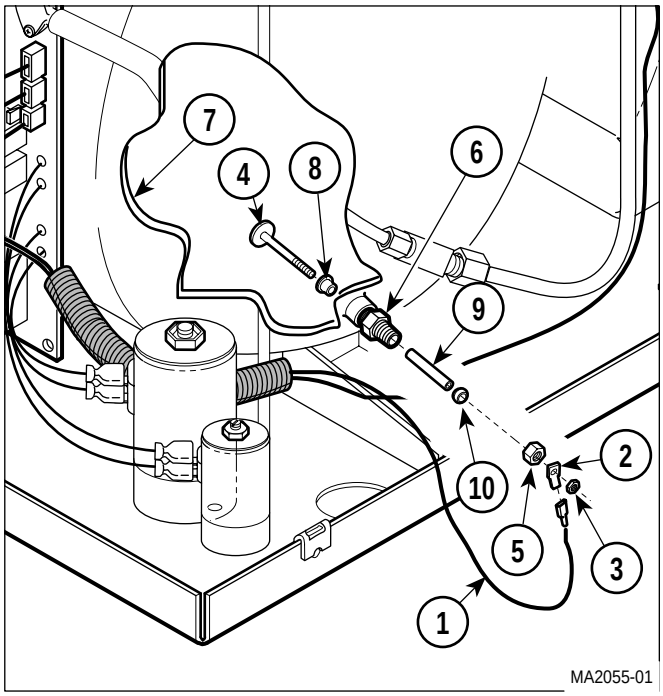

Figure 4-9. Pressure Vessel Water Level Sensor Removal / Installation

NOTE
The assembled level sensor rod must be installed from the inside of the pressure vessel.

(3) Install assembled level sensor rod (4) in fitting (6).

EQUIPMENT ALERT
The end of the silicone tube must extend past nut (5) after nut is installed. If it is not, the level sensor rod will not function properly because the terminal will be in contact with nut (5).

(4) Install and crimp crimp (10) on silicone tube (9).

(5) Install nut (5).

(6) Install terminal (2) on level sensor rod (4) and secure using nut (3).

(7) Connect wire (1) to terminal (2).

(8) Install wire tray rack and tray plate (Refer to para 4.17).

(9) Install back panel (Refer to para 4.5).

4.11 Vent Solenoid Removal / Installation

NOTE
Steps will vary slightly for M9D / M11D units. Use this procedure as a guide.

A. Removal

NOTE
Units prior to serial number CZ1110/OM1000 have a manifold assembly which secures the vent solenoid. Refer to the parts list to remove the vent solenoid on these sterilizers.

(1) Drain water from condensing tank.

(2) Remove back panel (Refer to para 4.5).

(3) Tag and disconnect two wires (1, Figure 4-10) from terminals (3).

(4) Tag and disconnect two wires (2) from terminals (4).

(5) Disconnect three tubes (5 thru 7) from elbows (8 thru 10).

(6) Remove two screws (11) from bottom of manifold assembly (12).

NOTE
Spacer (12A) is only on newer units.

(7) Remove manifold assembly (12) and spacer (12A) from base (13).

(8) Hold screw (1, Figure 4-11) and loosen nut (2). Turn terminals out of the way.

(9) Remove assembled vent solenoid (3) and elbow (4) from tee (5).

(10) Remove elbows (4 and 6) from vent solenoid (3).

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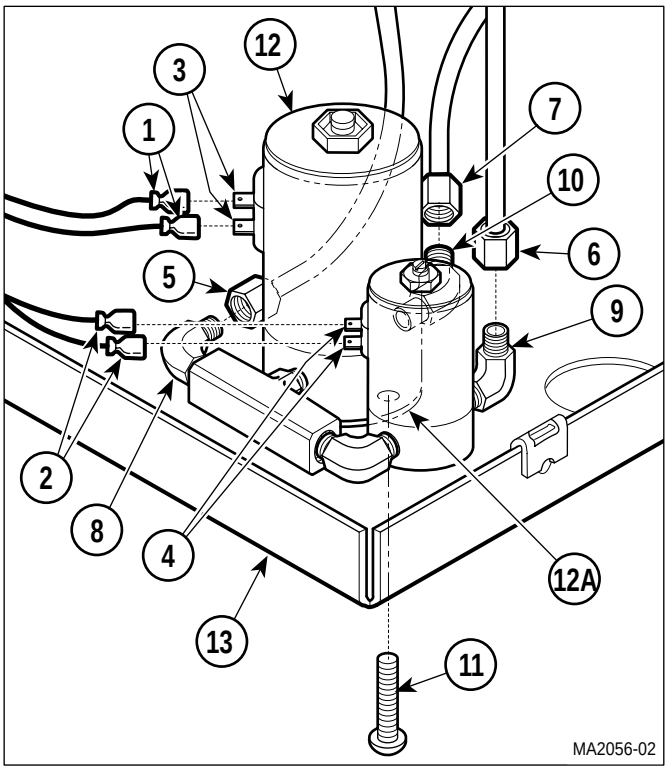

Figure 4-10. Vent Solenoid Removal / Installation

B. Installation

NOTE
The end of elbow (6) which receives a tube does not get coated with teflon tape.

(1) Coat the threads of elbows (4 and 6, Figure 4-11) with teflon tape.

(2) Install elbows (4 and 6) on vent solenoid (3).

(3) Hold screw (1) and loosen nut (2). Turn terminals out of the way.

(4) Install assembled elbow (4) and vent solenoid (3) on tee (5).

(5) Turn terminals of vent solenoid (3) so wires will connect easily to vent solenoid.

(6) Hold screw (1) and tighten nut (2).

EQUIPMENT ALERT
When installing the vent solenoid, the side of the solenoid marked IN needs to be connected to the pressure line. Reversing vent solenoid will cause system failure.

(7) Install spacer (12A, Figure 4-10) and manifold assembly (12) on base (13) and secure using two screws (11).

(8) Connect three tubes (5 thru 7) to elbows (8 thru 10).

(9) Connect two wires (2) to terminals (4).

(10) Connect two wires (1) to terminals (3).

(11) Install back panel (Refer to para 4.5).

(12) Refill condensing tank with distilled water.

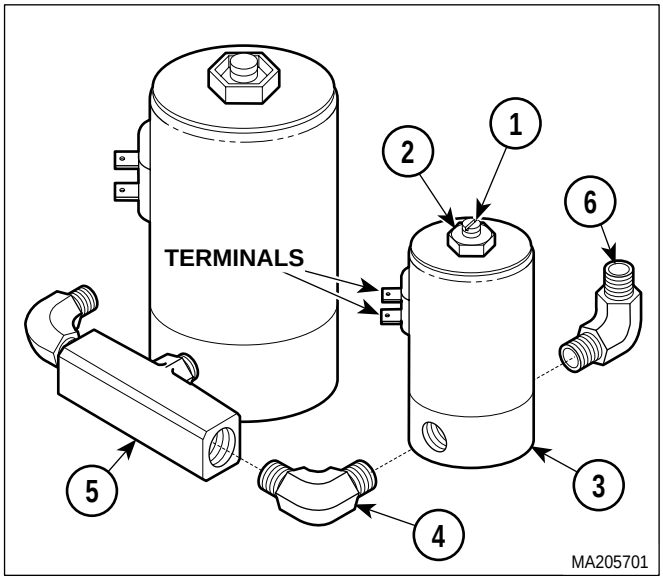

Figure 4-11. Vent Solenoid Fittings Removal / Installation

4.12 Fill Solenoid Removal / Installation

NOTE
Steps will vary slightly for M9D / M11D units. Use this procedure as a guide.

A. Removal

NOTE
Units prior to serial number CZ1110/OM1000 have a manifold assembly which secures the fill solenoid. Refer to the parts list to remove the fill solenoid on these sterilizers.

(1) Drain water from condensing tank.

(2) Remove back panel (Refer to para 4.5).

(3) Tag and disconnect two wires (1, Figure 4-12) from terminals (3).

(4) Tag and disconnect two wires (2) from terminals (4).

(5) Disconnect three tubes (5 thru 7) from elbows (8 thru 10).

(6) Remove two screws (11) from bottom of manifold assembly (12).

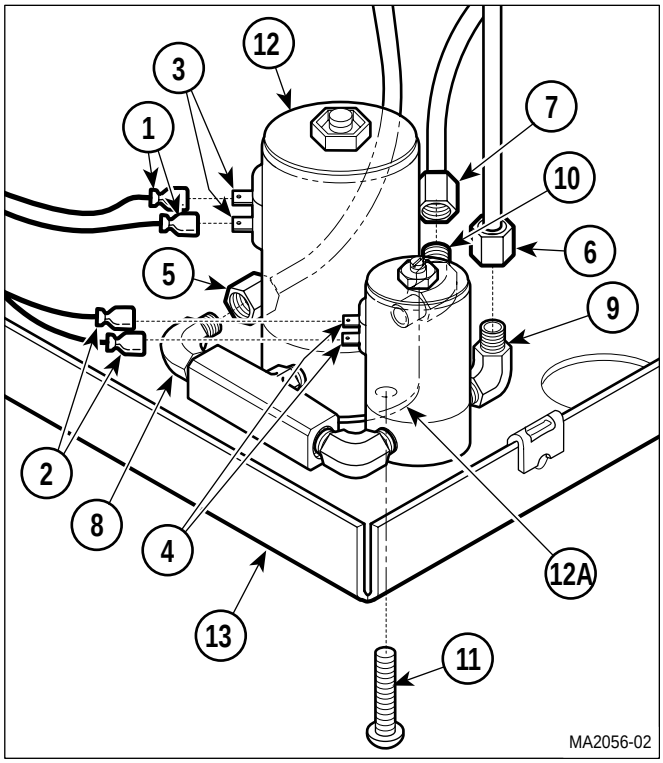

Figure 4-12. Fill Solenoid Removal / Installation

NOTE
Spacer (12A) is only on newer units.

(7) Remove manifold assembly (12) and spacer (12A) from base (13).

(8) Hold screw (1, Figure 4-13) and loosen nut (2). Turn terminals out of the way.

(9) Remove assembled vent solenoid (3) and elbow (4) from tee (5).

(10) Remove elbow (6) and tee (5) from fill solenoid (7).

(11) Remove elbow (8) from fill solenoid (7).

B. Installation

(1) Coat threads of tee (5, Figure 4-13) and elbows (6 and 8) with teflon tape.

(2) Install elbow (8) on fill solenoid (7).

(3) Install elbow (6) and tee (5) on fill solenoid (7).

(4) Loosen nut (9). Turn terminals of fill solenoid (7) so wires will connect easily to fill solenoid. Tighten nut (9).

(5) Coat threads of elbow (4) with teflon tape.

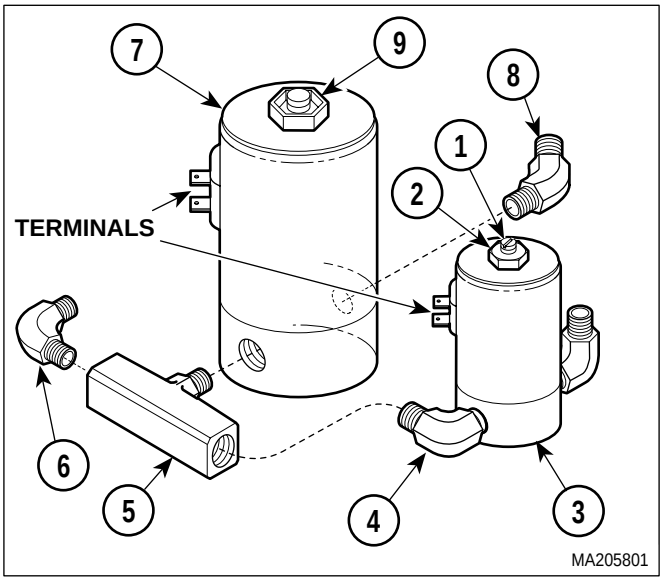

Figure 4-13. Fill Solenoid Fittings Removal / Installation

(6) Hold screw (1) and loosen nut (2). Turn terminals out of the way.

(7) Install assembled elbow (4) and vent solenoid (3) on tee (5).

(8) Turn terminals of vent solenoid (3) so wires will connect easily to vent solenoid.

(9) Hold screw (1) and tighten nut (2).

EQUIPMENT ALERT
When installing the vent solenoid and the fill solenoid, the side of the solenoids marked "IN" need to be connected to the pressure lines. Reversing solenoids will cause system failure.

(10) Install spacer (12A, Figure 4-12) and manifold assembly (12) on base (13) and secure using two screws (11).

(11) Connect three tubes (5 thru 7) to elbows (8 thru 10).

(12) Connect two wires (2) to terminals (4).

(13) Connect two wires (1) to terminals (3).

(14) Install back panel (Refer to para 4.5).

(15) Refill condensing tank with distilled water.

4.13 Control PC Board Removal / Installation

A. Removal

(1) Remove right hand side panel (Refer to para 4.3).

(2) Disconnect pressure tube (1, Figure 4-14) from pressure sensor (2).

NOTE
Units with old style control PC board with EPROM version N or after ***or*** new style control PC board will only have two wire harnesses (3) to disconnect instead of three.

(3) Disconnect two / three wire harnesses (3) from two / three connectors (4).

(4) Tag and disconnect two wires (5) from terminals (6).

(5) Tag and disconnect two wires (7) from terminals (8).

(6) Disconnect ribbon connector (9) from connector (10).

(7) Tag and disconnect neutral wire (11) from terminal (12).

(8) Tag and disconnect hot wire (13) from termi- nal (14).

(9) Disconnect printer cable (15) from connec- tor (16).

(10) Disconnect door switch harness (17) from connector (18).

M9 / M11 only

(11) Tag and disconnect two wires (19) from pulse solenoid terminals (20).

(12) Disconnect heater element wire (21) from connector (22).

NOTE
Positions of locknuts (1) and screws (2) are reversed on newer units.

(13) Remove two locknuts (1, Figure 4-15), screws (2), and control PC board (3) and control PC board bracket (4) as an assembly from base (5).

NOTE
Units prior to serial number CZ1110/OM1000 have the ground wire attached to the control PC board bracket. When nut (6), starwasher (7), and screw (8) are removed, ground wire will also be removed.

(14) Remove nut (6), starwasher (7), and screw (8) from control PC board bracket (4).

(15) Turn three standoff screws (9) 1/4 turn in the counter-clockwise direction and remove control PC board (3) and insulator (10) from control PC board bracket (4).

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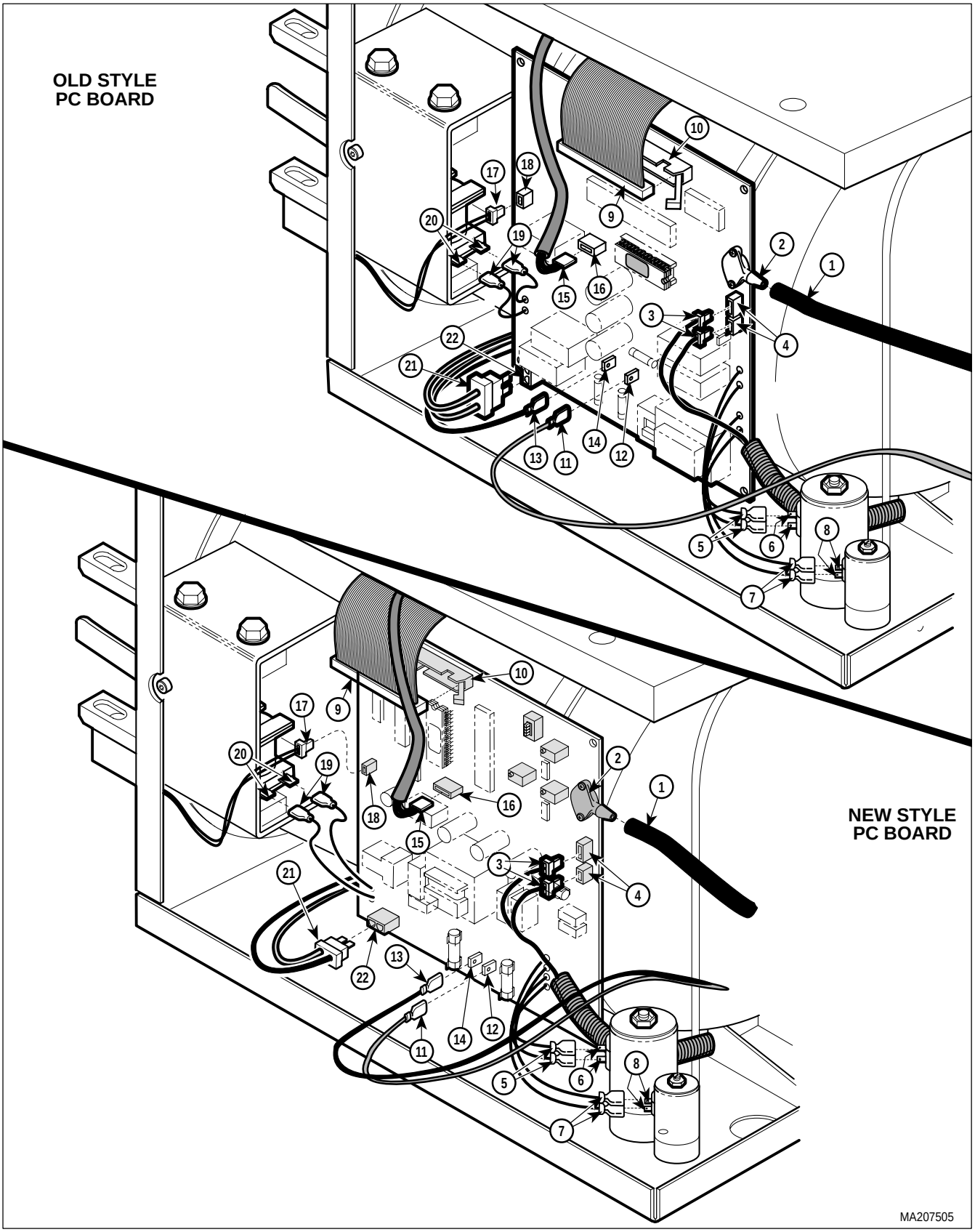

Figure 4-14. Control PC Board Connections

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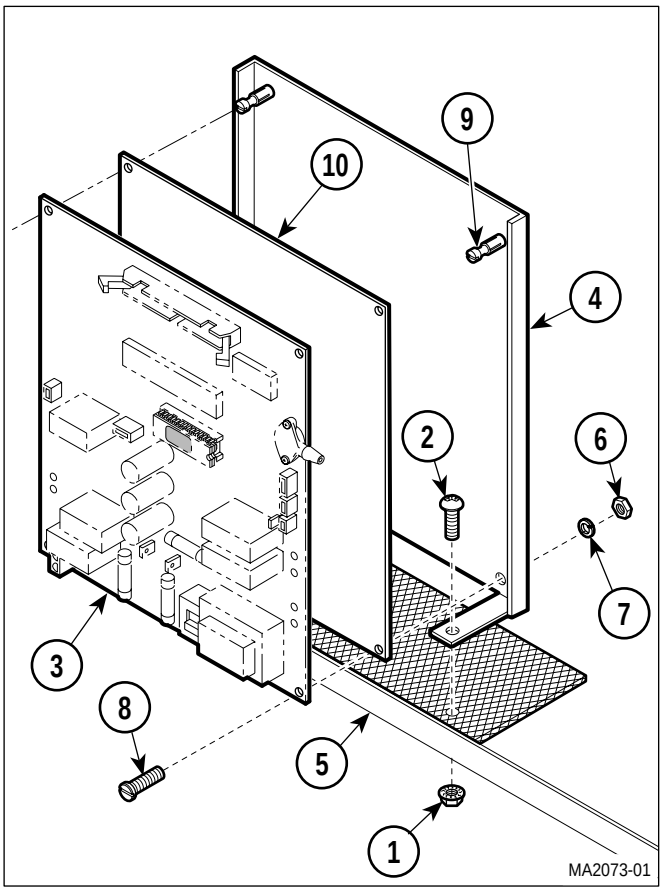

Figure 4-15. Control PC Board Removal / Installation

B. Installation

(1) Install insulator (10, Figure 4-15) and control PC board (3) on control PC board bracket (4) and secure by turning three standoff screws (9) 1/4 turn in the clockwise direction.

NOTE
Units prior to serial number CZ1110/OM1000 have the ground wire attached to the control PC board bracket. When nut (6), starwasher (7), and screw (8) are removed, ground wire will also be removed. Make sure ground wire is re-installed upon installation.

(2) Install screw (8), starwasher (7), and nut (6) on control PC board bracket (4).

NOTE
Positions of locknuts (1) and screws (2) are reversed on newer units.

(3) Install control PC board (3) and control PC board bracket (4) as an assembly on base (5) and secure using two screws (2) and lock- nuts (1).

(4) Connect heater element wire (21, Figure 4-14) to connector (22).

M9 / M11 only

(5) Connect two wires (19) on pulse solenoid terminals (20).

(6) Connect wire harness (17) to connector (18).

(7) Connect printer cable (15) to connector (16).

(8) Connect hot wire (13) to terminal (14).

(9) Connect neutral wire (11) to terminal (12).

(10) Connect ribbon connector (9) to connec tor (10).

(11) Connect two wires (7) to terminals (8).

(12) Connect two wires (5) to terminals (6).

NOTE
Units with old style control PC board with EPROM version N or after ***or*** new style control PC board will only have two wire harnesses (3) to connect instead of three.

(13) Connect two / three wire harnesses (3) to two / three connectors (4).

(14) Connect pressure tube (1) to pressure sensor (2).

(15) Install right hand side panel (Refer to para 4.3).

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4.14 Door Switch Removal / Installation

A. Removal

NOTE
Units prior to serial number CZ1110/OM1000 have a different switch weldment. Since this procedure tampers with the pressure vessel integrity, it should not be attempted until a Midmark service representative has been contacted.

(1) Open sterilizer door.

(2) Remove right hand side panel (Refer to para 4.3).

(3) Disconnect wire harness (1, Figure 4-16) from connector (2).

(4) Using 3/32 in. punch, remove two roll pins (3) from door switch bracket (4) (Refer to Table 1-2 for special tool).

(5) Remove door switch (5) from door switch bracket (4).

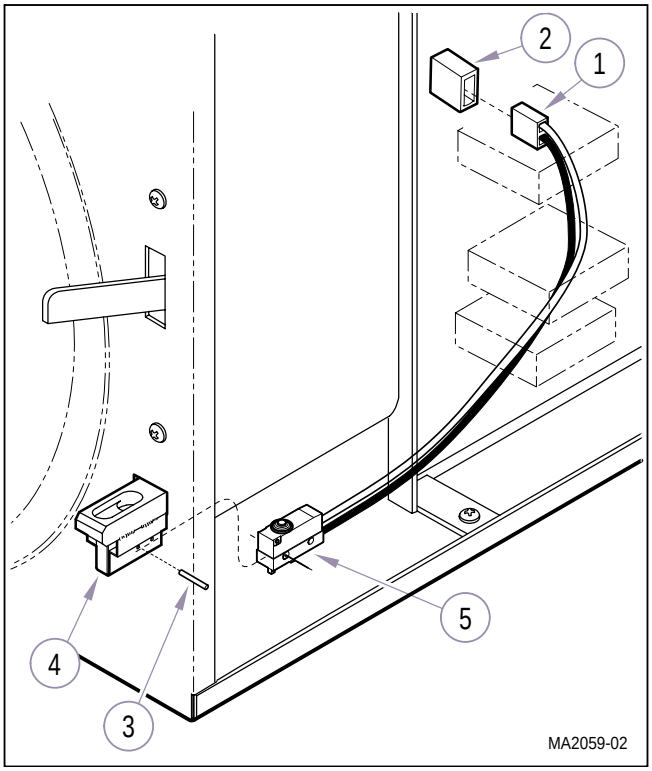

Figure 4-16. Door Switch Removal / Installation

B. Installation

(1) Position door switch (5) in door switch bracket (4).

(2) Using 3/32 in. punch, install two roll pins (3) in door switch bracket (4) (Refer to Table 1-2 for special tool).

(3) Connect wire harness (1) to connector (2).

(4) Install right hand side panel (Refer to para 4.3).

(5) Close sterilizer door.

4.15 Pulse Solenoid Removal / Installation *(M9 / M11 only)*

A. Removal

(1) Remove control PC board (Refer to para 4.13).

(2) Remove two screws (1, Figure 4-17) from pulse solenoid (2).

(3) Remove nut (3) and shoulder screw (4), and then remove pulse solenoid (2) and latch lever (5) as an assembly from pressure vessel bracket (6).

(4) Using 3/32 in. punch, remove roll pin (7) and latch lever (5) from plunger of pulse solenoid (2) (Refer to Table 1-2 for special tool).

B. Installation

(1) Using 3/32 in. punch, install latch lever (5) on plunger of pulse solenoid (2) and secure using roll pin (7) (Refer to Table 1-2 for special tool).

(2) Coat shoulder screw (4) with Loctite 271.

(3) Install latch lever (5) and pulse solenoid (2) as an assembly on pressure vessel bracket (6). Secure using shoulder screw (4) and nut (3).

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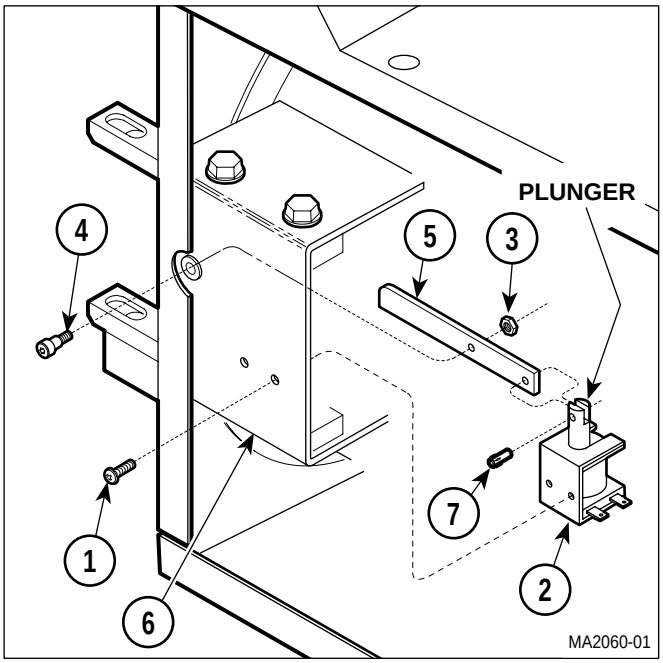

Figure 4-17. Pulse Solenoid Removal / Installation

NOTE
The holes for the two screws (1) are oblong. Install screws at the top of each hole first, then adjust downward as necessary if door will not open.

(4) Position pulse solenoid (2) on pressure vessel bracket (6) and secure in position using two screws (1).

(5) Install control PC board (Refer to para 4.13).

4.16 Thermostat Removal / Installation

A. Removal

(1) Drain water from condensing tank.

(2) Remove base inspection cover (Refer to para 4.6).

(3) Tag and disconnect wires (1 and 2, Figure 4-18) from terminals (3 and 4).

(4) Loosen two nuts (5) and pull top of bracket (6) approximately 1 in. from pressure vessel (7).

(5) Rotate terminals (3 and 4) to a vertical position and slide thermostat (8) upward and out of bracket (6).

B. Installation

(1) Slide thermostat (8) into bracket (6) and rotate terminals (3 and 4) to a horizontal position.

(2) Position bracket (6) against pressure vessel (7) and secure by tightening two nuts (5).

(3) Connect wires (1 and 2) to terminals (3 and 4).

(4) Install base inspection cover (Refer to para 4.6).

(5) Refill condensing tank with distilled water.

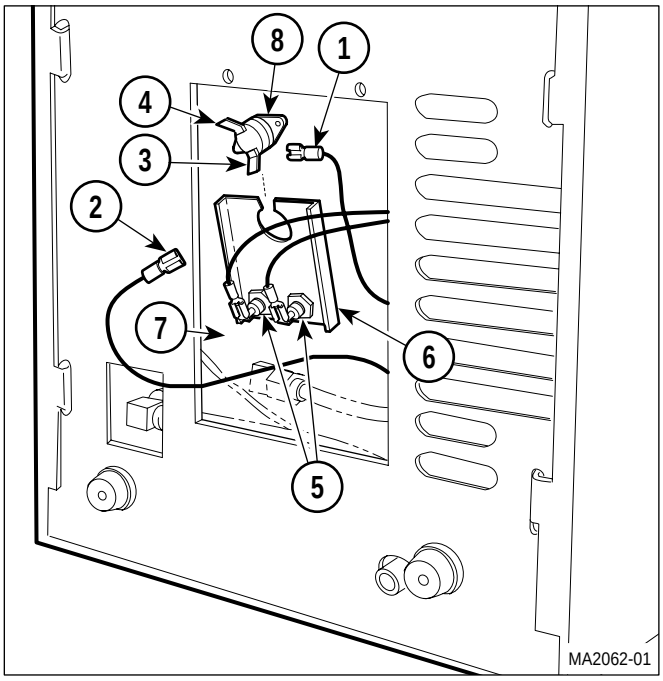

Figure 4-18. Thermostat Removal / Installation

4.17 Wire Tray Rack and Tray Plate Removal / Installation

A. Removal

(1) Open sterilizer door.

(2) Remove trays.

(3) Pull wire tray rack (1, Figure 4-19) and tray plate (2) from pressure vessel (3).

B. Installation

(1) Position two rear posts of wire tray rack (1) in rack holes of tray plate (2).

(2) Hold front end of wire tray rack (1) at approximately a 30° angle from tray plate (2).

NOTE
If wire tray rack is not raised, installation is very difficult.

(3) Insert rear end of wire tray rack (1) and tray plate (2) as an assembly in pressure vessel (3). Push wire tray rack and tray plate as far as they will go.

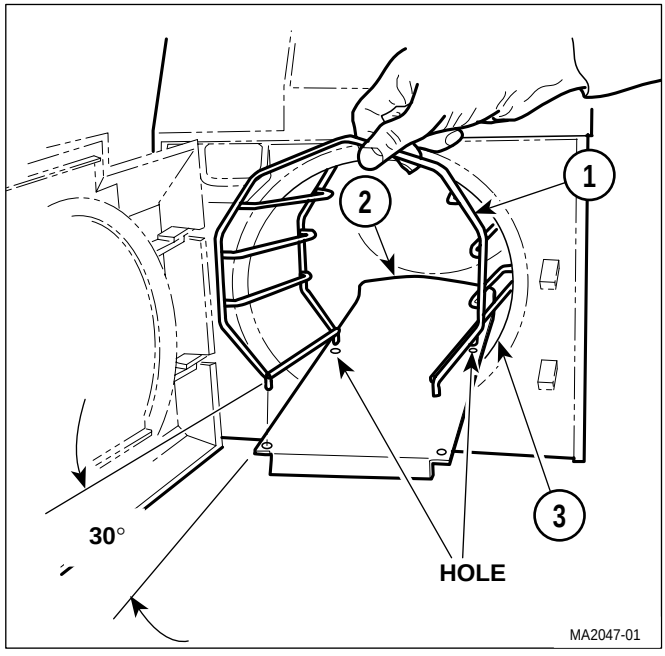

Figure 4-19. Wire Tray Rack and Tray Plate Removal / Installation

(4) Install trays.

(5) Close sterilizer door.

4.18 Heating Element and Gasket Removal / Installation

A. Removal

(1) Drain water from condensing tank.

(2) Remove base inspection cover (Refer to para 4.6).

(3) Tag and disconnect two wires (1, Figure 4-20) from terminals (2).

(4) Remove two nuts (3), lock washers (4), and brass washers (5).

EQUIPMENT ALERT
Over bending may result in broken or cracked terminals.

NOTE
The following step is necessary to remove the heating element from the pressure vessel.

(5) Straighten terminals (2) slightly from the present 90° position to approximately a 10° straighter position.

(6) Remove bracket (6) from pressure vessel (7) and position out-of-way.

(7) Turn sterilizer upright.

(8) Remove wire tray rack and tray plate (Refer to para 4.17).

(9) Remove heating element (8) and spacer assembly (9) from pressure vessel (7).

NOTE
Perform the following step only if the heating element is *not* being replaced, but damaged gaskets *are*.

(10) Remove two gaskets (10) from heating ele-ment (8).

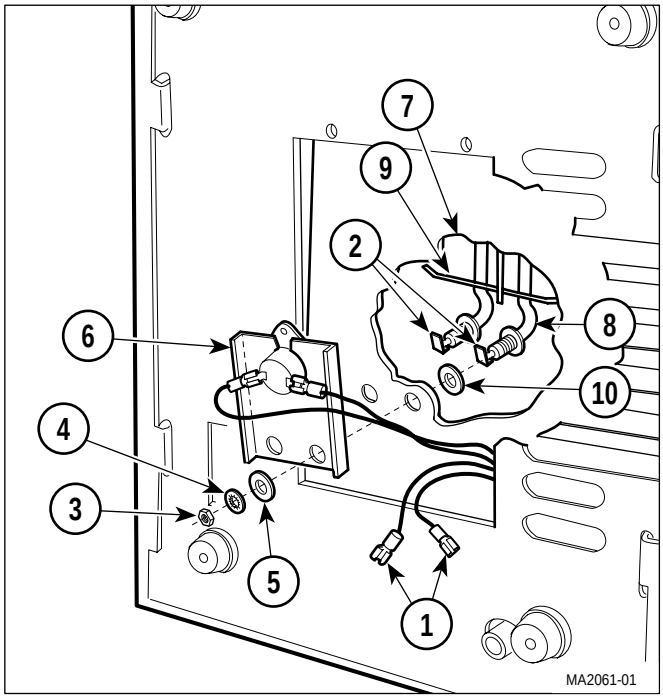

Figure 4-20. Heating Element and Gasket Removal / Installation

B. Installation

(1) Install two gaskets (10) on heating element (8).

EQUIPMENT ALERT
Over bending may result in broken or cracked terminals.

NOTE
The following step is necessary to install the heating element in the pressure vessel.

(2) Straighten terminals (2) slightly from the present 90° position to approximately a 10° straighter position.

(3) Install spacer assembly (9) and heating element (8) in pressure vessel (7).

(4) Turn sterilizer on its back.

(5) Position bracket (6) on pressure vessel (7).

EQUIPMENT ALERT
Hold heating element firmly in position while tightening nuts. Otherwise, damage to heating element or improper positioning of heating element may result. Also, spacer assembly must remain above gaskets. If spacer assembly is installed under gasket, leaking will result.

(6) Install two brass washers (5), lock washers (4), and nuts (3) on heating element (8).

EQUIPMENT ALERT
Over bending may result in broken or cracked terminals.

(7) Bend terminals (2) slightly, back to their original 90° position.

(8) Connect two wires (1) to terminals (2).

(9) Turn sterilizer upright.

(10) Install wire tray rack and tray plate (Refer to para 4.17).

(11) Install base inspection cover (Refer to para 4.6).

(12) Refill condensing tank with distilled water.

4.19 Filter Removal / Installation

A. Removal

(1) Remove wire tray rack and tray plate (Refer to para 4.17).

NOTE
Turn filter in a circular motion while pulling upward to remove.

(2) Using vise grips, remove filter (1, Figure 4-21) from pressure vessel (2).

B. Installation

(1) Position filter (1) in pressure vessel (2).

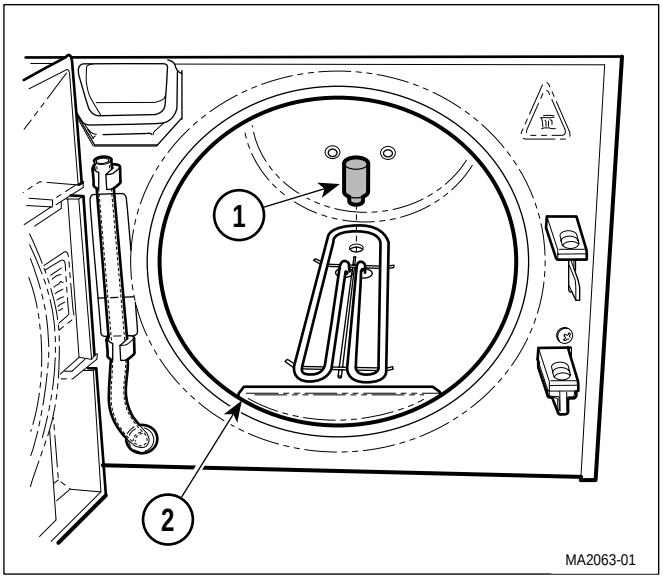

Figure 4-21. Filter Removal / Installation

(2) Using rubber hammer, tap filter (1) lightly into pressure vessel (2).

(3) Install wire tray rack and tray plate (Refer to para 4.17).

4.20 Door Gaskets Removal / Installation

A. Removal

(1) Open sterilizer door.

(2) Remove dam gasket (1, Figure 4-22) and door gasket (2) from door (3).

B. Installation

(1) Install door gasket (2) in groove in door (3).

NOTE
Some models may have two mounting pins on door instead of flap. Secure dam gasket by pressing onto mounting pins.

(2) Install dam gasket (1) by inserting bottom edge of dam gasket in slot of door gasket (2) and tucking top edge of dam gasket under flap of door (3).

(3) Close sterilizer door.

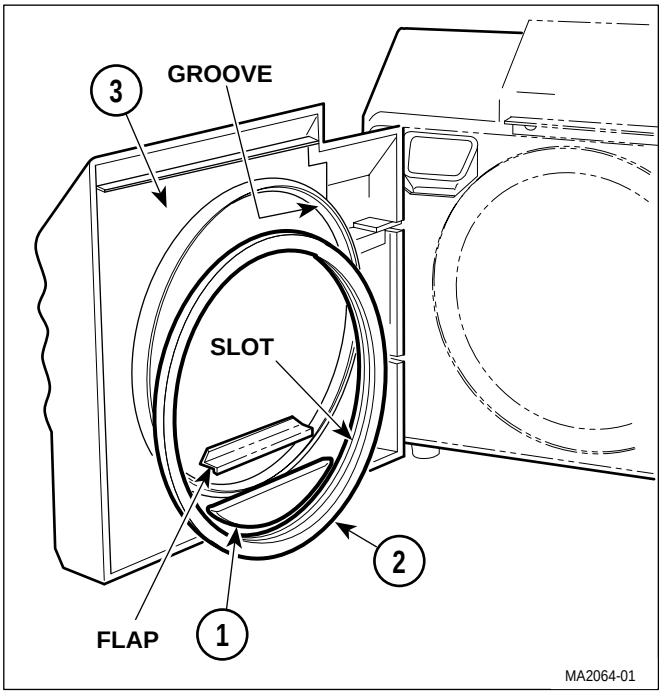

Figure 4-22. Door Gaskets Removal / Installation

4.21 Display PC Board Removal / Installation

A. Removal

(1) Remove top cover (Refer to para 4.2).

(2) Remove six screws (1, Figure 4-23) and display PC board (2) from top cover (3).

(3) If damaged, remove gasket (4) from top cover (3).

B. Installation

(1) If removed, install new gasket (4) by peeling protective backing off of gasket and pressing gasket firmly into position on top cover (3).

(2) Install display PC board (2) on top cover (3) and secure using six screws (1).

(3) Install top cover (Refer to para 4.2).

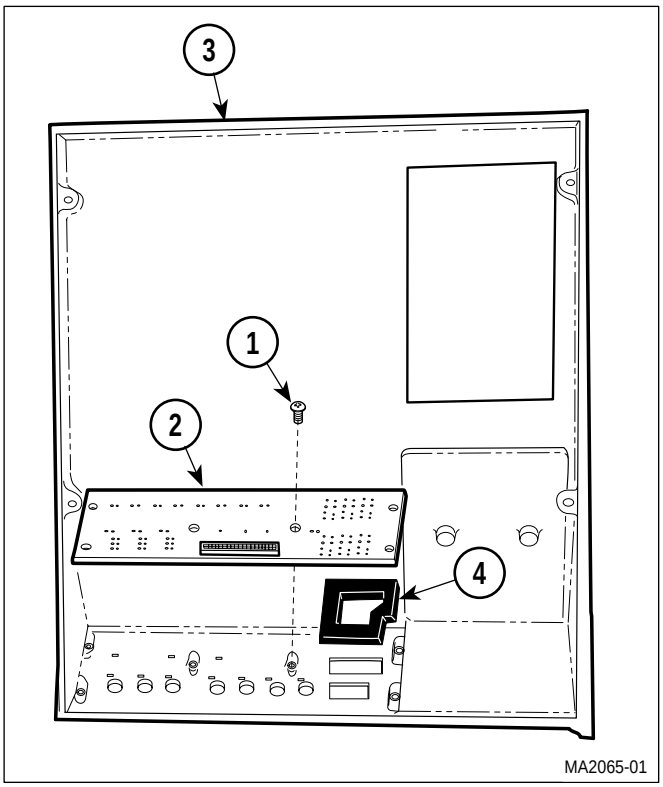

Figure 4-23. Display PC Board Removal / Installation

4.22 Condensing Tank Assembly Removal / Installation

A. Removal

(1) Drain water from condensing tank.

(2) Turn sterilizer onto its back.

(3) Disconnect fill tube (1, Figure 4-24) from elbow (2).

(4) Turn sterilizer upright.

(5) Remove top cover (Refer to para 4.2).

(6) Remove back panel (Refer to para 4.5).

(7) Remove bellows assembly (Refer to para 4.7).

(8) Loosen hose clamp (1, Figure 4-25) and remove sight/drain tube (2) and hose clamp from condensing tank assembly (3).

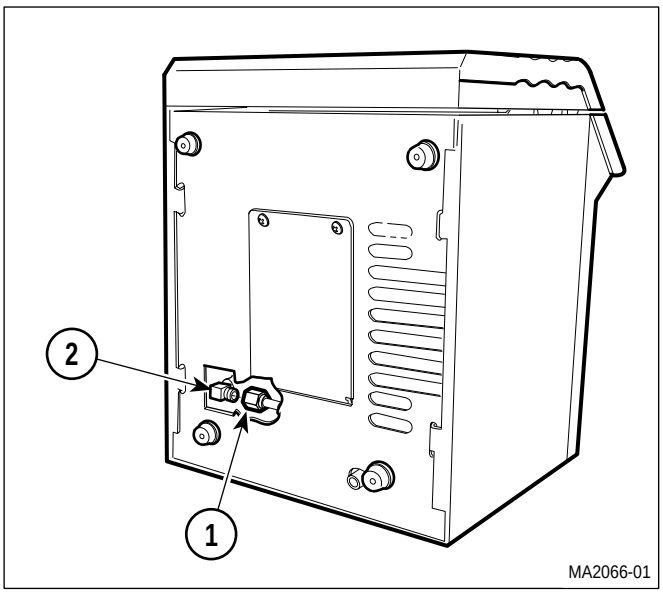

Figure 4-24. Condensing Tank Assembly Fill Tube Disconnection / Connection

NOTE
The following step applies only to units with old style control PC board with EPROM version M or before. Units with old style control PC board with EPROM version N or after ***or*** new style control PC board do not have wire (4) and terminal (5).

(9) Disconnect wire (4) from terminal (5).

(10) Disconnect vent tube (6) from fitting (7).

NOTE
Positions of locknut (9) and screws (8) are reversed on newer units.

(11) Remove screw (8), locknut (9), and condensing tank assembly (3) from base (10).

B. Installation

NOTE
Fill tube must be lined up with fitting at this time because it will be impossible to line up after screw and locknut are installed.

(1) Position condensing tank assembly (3, Figure 4-25) on base (10) and secure using screw (8) and locknut (9).

(2) Connect vent tube (6) to fitting (7).

NOTE
The following step applies only to units with old style control PC board with EPROM version M or before. Units with old style control PC board with EPROM version N or after ***or*** new style control PC board do not have wire (4) and terminal (5).

(3) Connect wire (4) to terminal (5).

(4) Install hose clamp (1) and sight/drain tube (2) on condensing tank assembly (3). Tighten hose clamp.

(5) Install bellows assembly (Refer to para 4.7).

(6) Install back panel (Refer to para 4.5).

(7) Install top cover (Refer to para 4.2).

(8) Turn sterilizer onto its side.

(9) Connect fill tube (1, Figure 4-24) to elbow (2).

(10) Turn sterilizer upright.

(11) Refill condensing tank with distilled water.

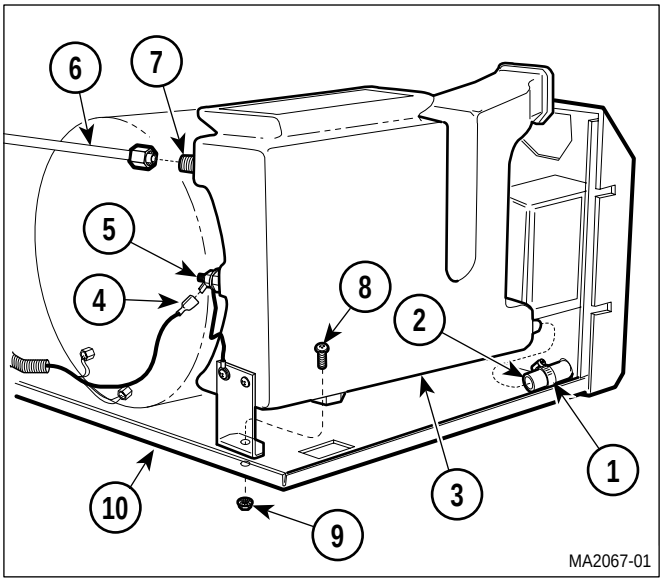

Figure 4-25. Condensing Tank Assembly Removal / Installation

4.23 Pressure Relief Valve Removal / Installation

A. Removal

(1) Remove condensing tank assembly (Refer to para 4.22).

(2) Disconnect tube (1, Figure 4-26) from elbow (2).

(3) Remove elbow (2) from pressure relief valve (3).

(4) Remove pressure relief valve (3) from pressure vessel (4).

B. Installation

(1) Coat threads of pressure relief valve (3) and elbow (2) with teflon tape.

(2) Install pressure relief valve (3) in pressure vessel (4).

(3) Install elbow (2) on pressure relief valve (3).

(4) Connect tube (1) to elbow (2).

(5) Install condensing tank assembly (Refer to para 4.22).

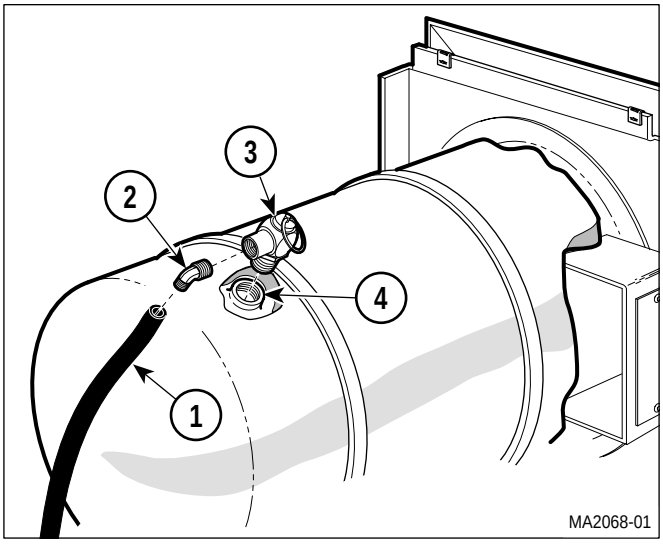

Figure 4-26. Pressure Relief Valve Removal / Installation

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4.24 Pressure / Temperature Potentiometers Adjustments

EQUIPMENT ALERT
The pressure zero, pressure range, and temperature potentiometers cannot be adjusted separately. If one potentiometer needs adjusted, then the entire potentiometer adjustment procedure must be performed, and it must be performed in the proper sequence as follows:

(1) Remove right hand side panel.

(2) Open sterilizer door.

DANGER
The following steps require the sterilizer to be plugged in to power while the adjustment is being performed. Do not touch any components except for the adjusting screw of the potentiometer. Failure to comply with these instructions could result in an electrical shock, which could result in severe personal injury or death.

NOTE
After the following step is performed, the display PC board lamps will individually illuminate and then extinguish one at a time in a left to right sequence. When all the lamps have illuminated and extinguished, proceed with step 4.

(3) Press and hold down the LIQUIDS and PACKS buttons simultaneously while connecting the power cord to the sterilizer (See Figure 4-27). Release the LIQUIDS and PACKS buttons.

NOTE
When each button is pressed, its corresponding lamp will illuminate and stay illuminated. Also, after the following step, the PRESSURE (PSI) display will display the pressure that the control PC board is reading and the TEMP (°F) / TIME (MIN: SECONDS) display will display the temperature that the control PC board is reading. When each button has been pushed, proceed with step 5.

(4) Press and release the UNWRAPPED, POUCHES, LIQUIDS, PACKS, START, STOP, AND ON/STANDBY buttons one at a time and in this order.

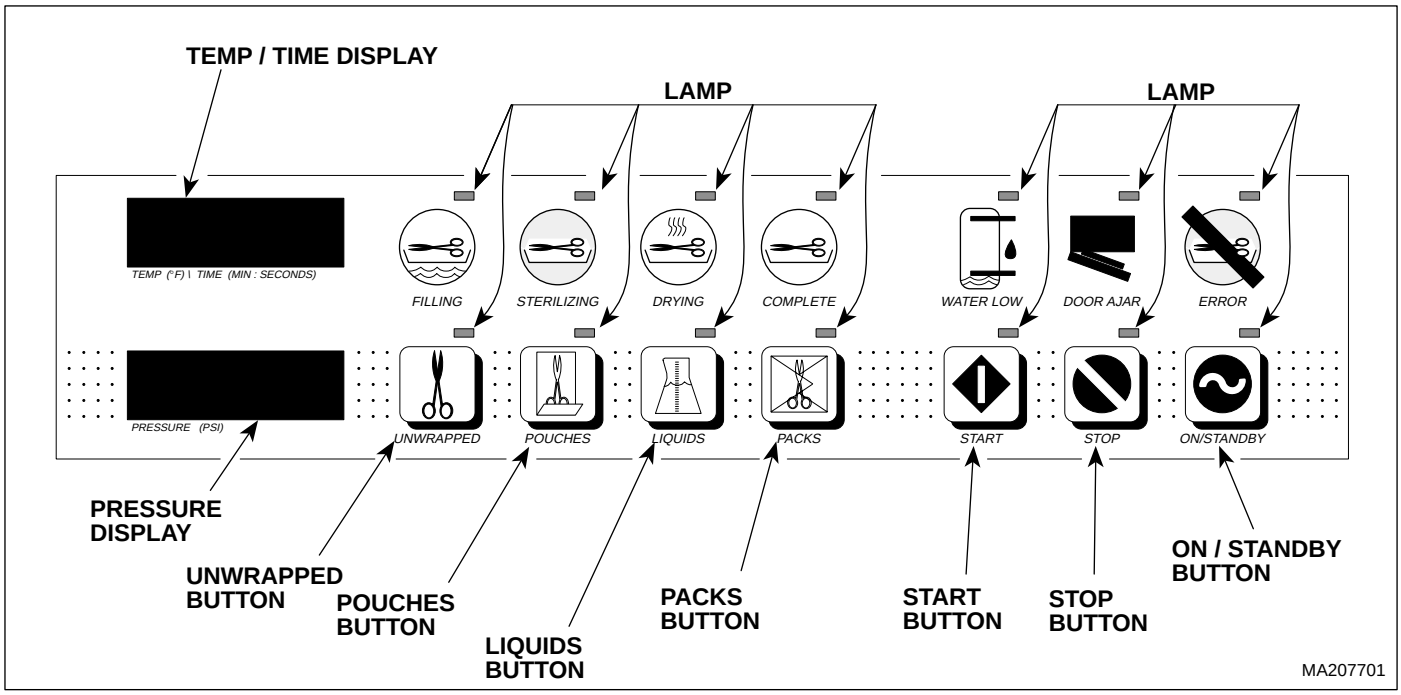

Figure 4-27. Display PC Board Lamp / Display / Button Check
(M9 / M11 shown)

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(5) Turn adjusting screw of pressure zero potentiometer (1, Figure 4-28) in the counter-clockwise direction until the PRESSURE (PSI) display reads 0.0 psi (0.0 kPa).

(6) Turn adjusting screw of pressure zero potentiometer (1) in the clockwise direction until the PRESSURE (PSI) display reads 0.1 psi (1 kPa).

CAUTION
The multimeter leads must be connected exactly as shown in the illustration. Connecting a lead to the wrong side of the resistor or wrong pin of the chip will result in an incorrect adjustment.

(7) Set the multimeter to read VDC at least the 5 Volts range. Connect the red lead of a multimeter to Test Point (A) and the black lead of a multimeter to Test Point (B).

NOTE
In the following step, if the digital multimeter being used has only three digits, adjust to a reading of 2.54 VDC and then adjust and set to where the reading just changes to 2.55 VDC.

(8) The multimeter should read 2.550 VDC ±0.001 VDC. If multimeter reading is not 2.550 VDC ±0.001 VDC, adjust the adjusting screw of the temperature potentiometer (3) in a clockwise direction to lower the voltage setting or a counter-clockwise direction to raise the voltage setting until the multimeter reading is 2.550 VDC ±0.001 VDC.

(9) Close the sterilizer door.

(10) Connect Pressure Gauge Test Harness to sterilizer (See Figure 4-29) (Refer to the sterilizer Service and Parts Manual for this special tool).

(11) Press the START button to start a test/calibration cycle and wait until the temperature on the TEMP (°F) / TIME (MIN: SECONDS) display reaches 272 - 273°F (133-134°C) (See Figure 4-27).

NOTE
Turning the adjusting screw of the pressure range potentiometer in the clockwise direction raises the sterilizer pressure reading while turning the adjusting screw in the counter-clockwise direction lowers the sterilizer pressure reading.

(12) Turn the adjusting screw of the pressure range potentiometer (2, Figure 4-28) in the clockwise or counter-clockwise direction until the reading on the PRESSURE (PSI) display matches the reading of the Pressure Gauge Test Harness within a tolerance of ±0.5 psi (3.5 kPa).

(13) Recheck the multimeter reading. It should still read 2.550 VDC ±0.001 VDC.

(14) Press the STOP button to end the test/calibration cycle and allow the sterilizer to vent and open its door (See Figure 4-27).

(15) Disconnect the leads of the multimeter from Test Points (A and B, Figure 4-28).

(16) Disconnect the power cord from the sterilizer and then repeat steps 3 and 4 of this procedure. The reading should read 0.1 psi (1 kPa) with the sterilizer door open. If not, repeat steps 5 and 6 of this procedure.

(17) Disconnect the power cord from sterilizer.

(18) Disconnect Pressure Gauge Test Harness from sterilizer (See Figure 4-29).

(19) Install right hand side panel.

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SECTION IV
MAINTENANCE / SERVICE

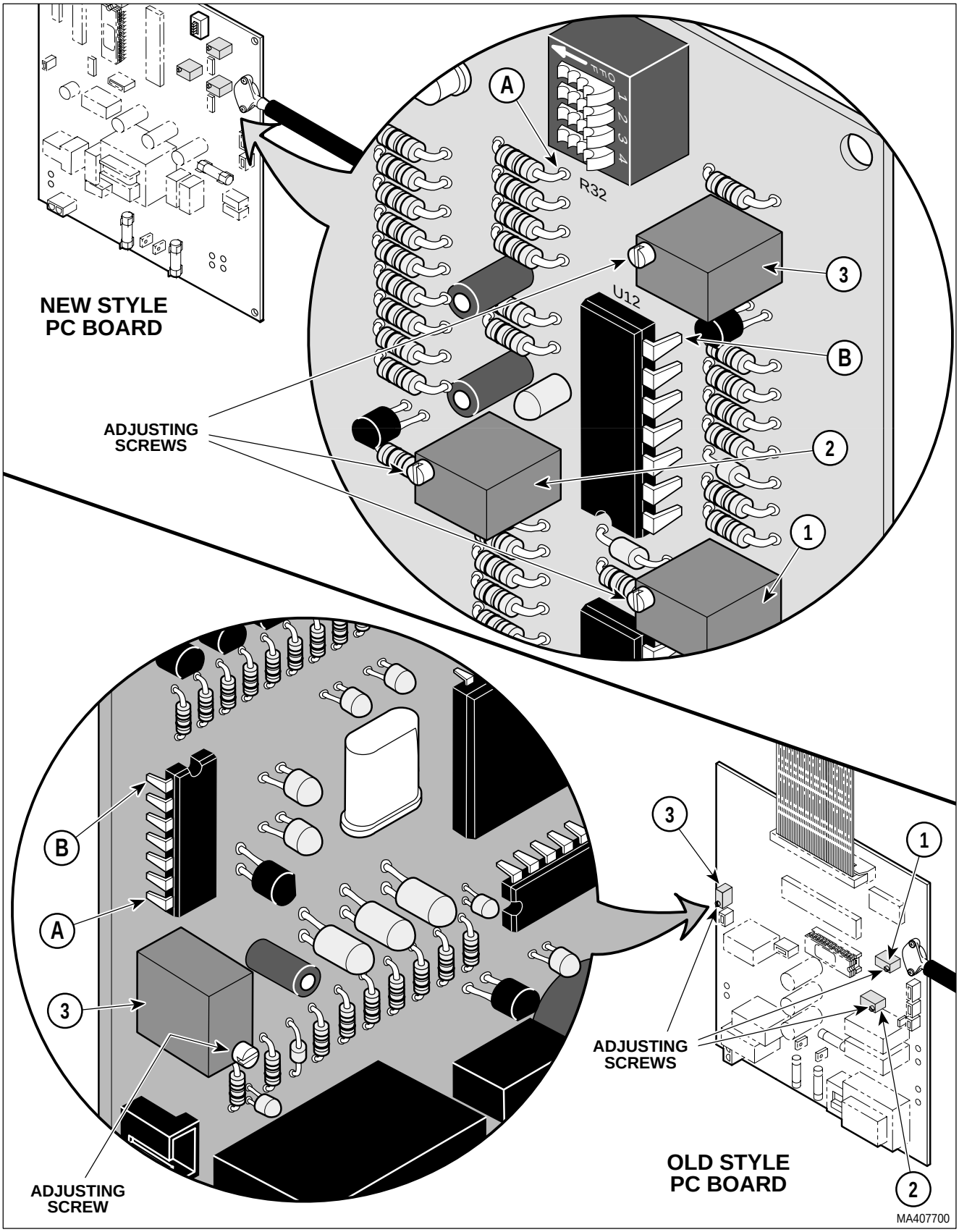

Figure 4-28. Potentiometer Adjustments

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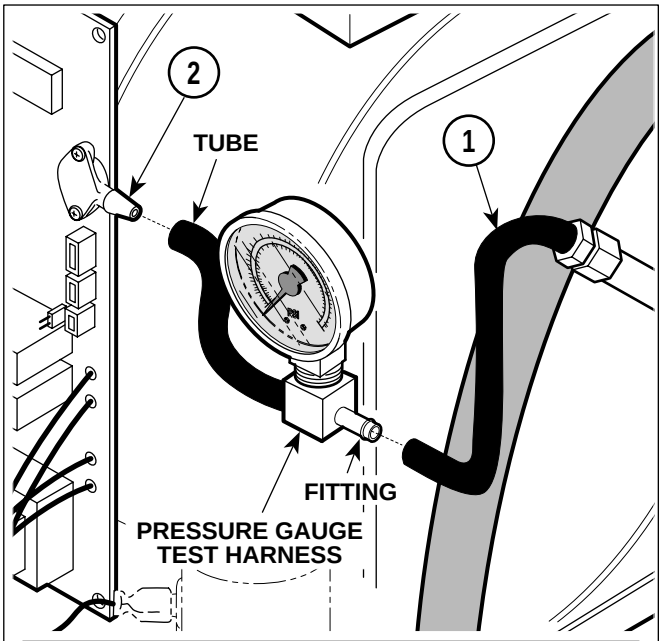

To connect Pressure Gauge Test Harness to sterilizer:

1. **Disconnect tube (1) from pressure sensor (2).**
2. **Connect tube of Pressure Guage Test Harness to pressure sensor (2).**
3. **Connect tube (1) to fitting of Pressure Guage Test Harness.**

To disconnect Pressure Gauge Test Harness from sterilizer:

1. **Disconnect tube (1) from fitting of Pressure Guage Test Harness.**
2. **Disconnect tube of Pressure Guage Test Harness from pressure sensor (2).**
3. **Connect tube (1) to pressure sensor (2).**

MA2070-01

Figure 4-29. Connecting / Disconnecting Pressure Gauge Test Harness

4.25 Display PC Board Lamp / Display / Button Check

(1) Disconnect power cord from the sterilizer.

(2) Press and hold down the LIQUIDS and PACKS buttons simultaneously, while connecting the power cord to the sterilizer (See Figure 4-30). Release the LIQUIDS and PACKS buttons.

(3) Observe the display PC board lamps. In a left to right sequence, each lamp on the display PC board should individually illuminate and then extinguish. If all the display PC board lamps do not illuminate and then extinguish, replace display PC board (Refer to para 4.21).

(4) Press and release the UNWRAPPED, POUCHES, LIQUIDS, PACKS, START, STOP, AND ON/STANDBY buttons one at a time and in this order.

(5) Observe the lamps that correspond with each button. If all lamps do not illuminate and stay illuminated when their corresponding button is pressed, replace the display PC board (Refer to para 4.21).

(6) Observe the pressure and temperature/time displays. If the pressure and temperature/time displays do not display pressure and temperature readings, replace the display PC board (Refer to para 4.21).

(7) Disconnect power cord from the sterilizer.

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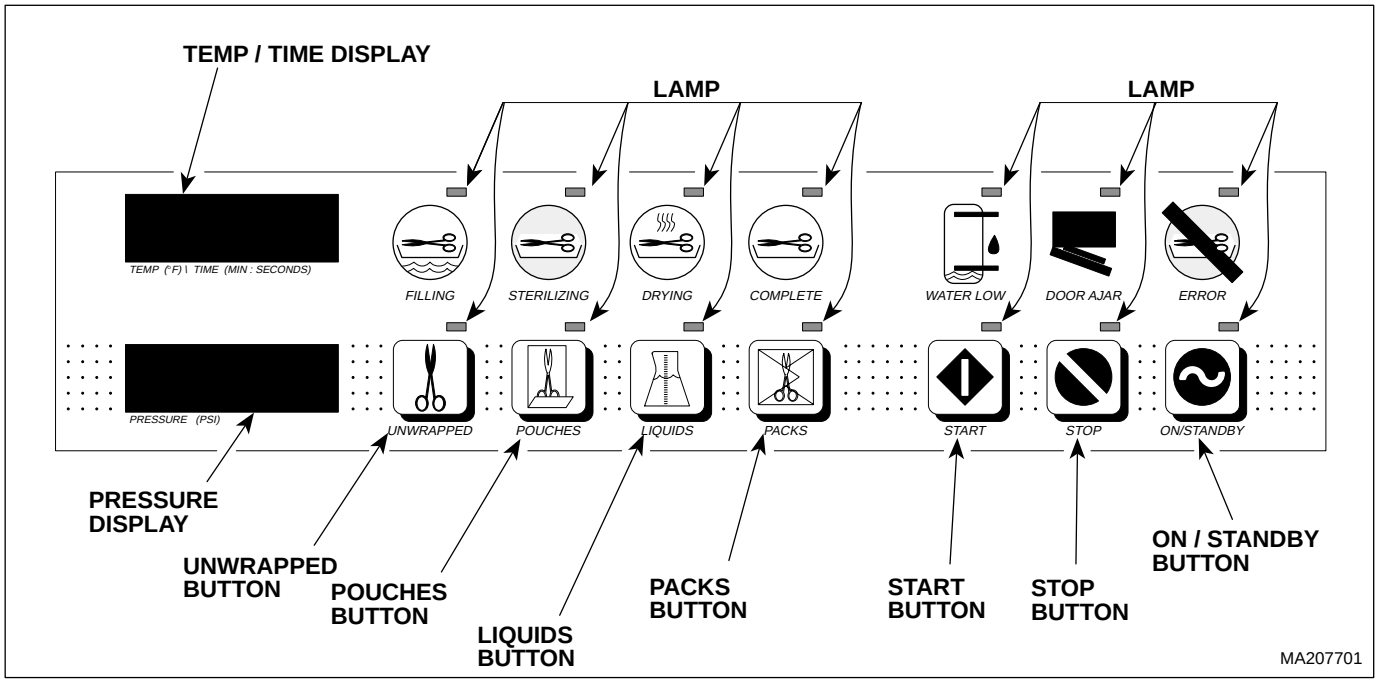

Figure 4-30. Display PC Board Lamp / Display / Button Check *(M9 / M11 shown)*

4.26 Pressure Relief Valve Check

(1) Remove the top inspection cover (1, Figure 4-31).

WARNING
Refer to the operator manual for complete instructions on operating the sterilizer. Failure to do so could result in severe personal injury.

(2) Select the UNWRAPPED cycle and start the cycle.

DANGER
Pressure Relief Valve will be hot. Use a screwdriver or rod to pull the wire ring. Do not pull the wire ring with bare hands or burns will result. Steam will be vented from under the rear of the sterilizer. To keep from being burned, place a steam barrier (a rolled up towel) around the bottom of the sterilizer.

(3) When the "heat up" portion of the cycle is complete and the elapsed time is being counted down on the display PC board, pull on wire ring of pressure relief valve (2) with a screwdriver.

(4) If excessive force was required to open pressure relief valve (2), replace the pressure relief valve (Refer to para 4.23).

NOTE
If the pressure relief valve does not close completely when the wire ring is released, pull the wire ring again and release it quickly so the valve snaps back into position. Do this until the valve seats properly.

(5) Release wire ring of pressure relief valve (2). The steam should vent out of the pressure relief valve until the wire ring is released. When the wire ring is released, the valve should seat, stopping the release of steam.

(6) If the pressure relief valve (2) will not re-seat properly, replace the pressure relief valve (Refer to para 4.23).

(7) Install top inspection cover (1).

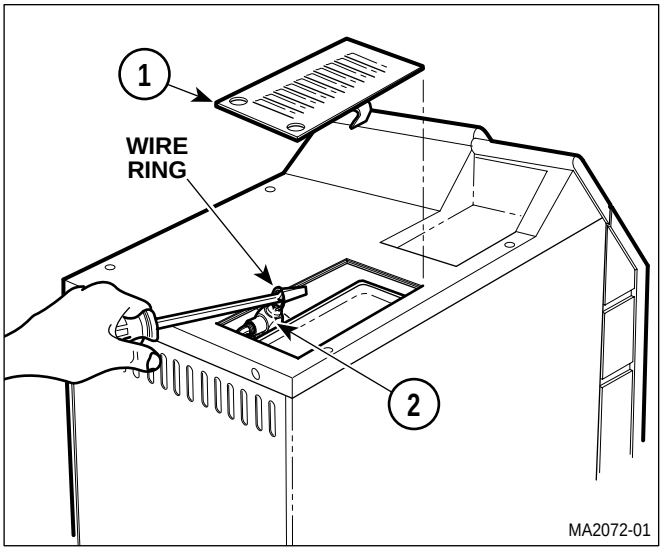

Figure 4-31. Pressure Relief Valve Check

4.27 Dry Cycle Dip Switches Adjustment

(1) Unplug power cord from outlet receptacle.

(2) Remove right hand side panel (Refer to para 4.3).

NOTE
There are four repeat interval dip switch settings; setting #1, setting #2, setting #3, and setting #4. The unit comes factory set at the repeat interval setting #3. Setting #1 is shortest repeat interval, setting #2 is longer, setting #3 is longer yet, and setting #4 is the longest repeat interval.

This procedure only applies to units with a new style control PC board; units with serial numbers: CZ2457, DA1005, DB1150, DX1970, DY1139, ES1347, ET1095, FD-1000, FP1000, FR1000, GB1000 and OM-9449 thru Present.

(3) If unit has has been overheating during the drying cycle and activating the overheat thermostat, determine the current repeat interval dip switch settings for the unit per Figure 4-32 and then change the dip switch settings to the next shortest repeat interval.

(4) Run a cycle. Repeat step 3 if overheat thermostat activates again.

(5) Install right hand side panel (Refer to para 4.3).

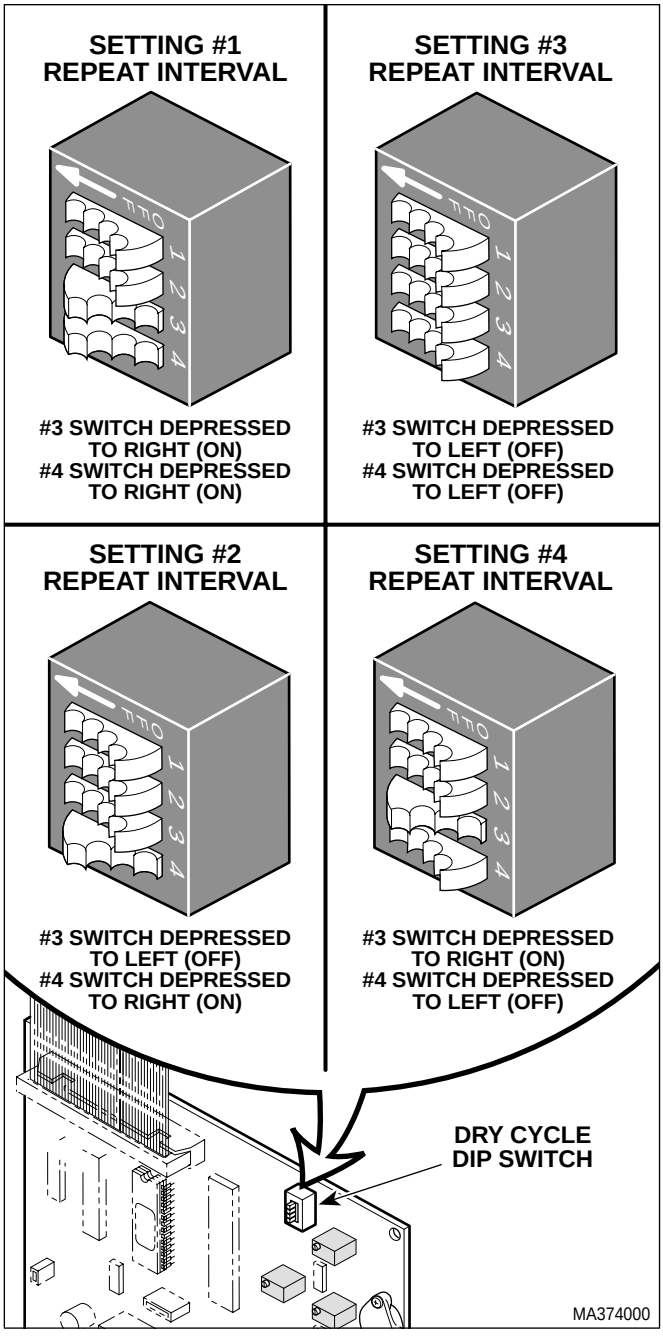

Figure 4-32. Dry Cycle Dip Switches Adjustment

4.28 M9 / M11 Door Opening Test

NOTE
This test applies only to units with newer style PC boards.

(1) Fill chamber with water. *[To do this, start any cycle. After chamber has filled with water, the Sterilizing LED will illuminate]*.

(2) Disconnect power cord.

(3) Open door.

(4) Press and hold **STOP** & **POUCHES** buttons (see Figure 4-33) while plugging in power cord.

(5) Press and release all buttons from left to right across display panel.

(6) Close door. *[This will activate all relays in the sterilizer in sequence. Pulse solenoind should automatically open door when test cycle is complete].*

(7) To rerun test, repeat steps 2 thru 6.

(8) To verify proper operation, run a complete cycle when test is complete.

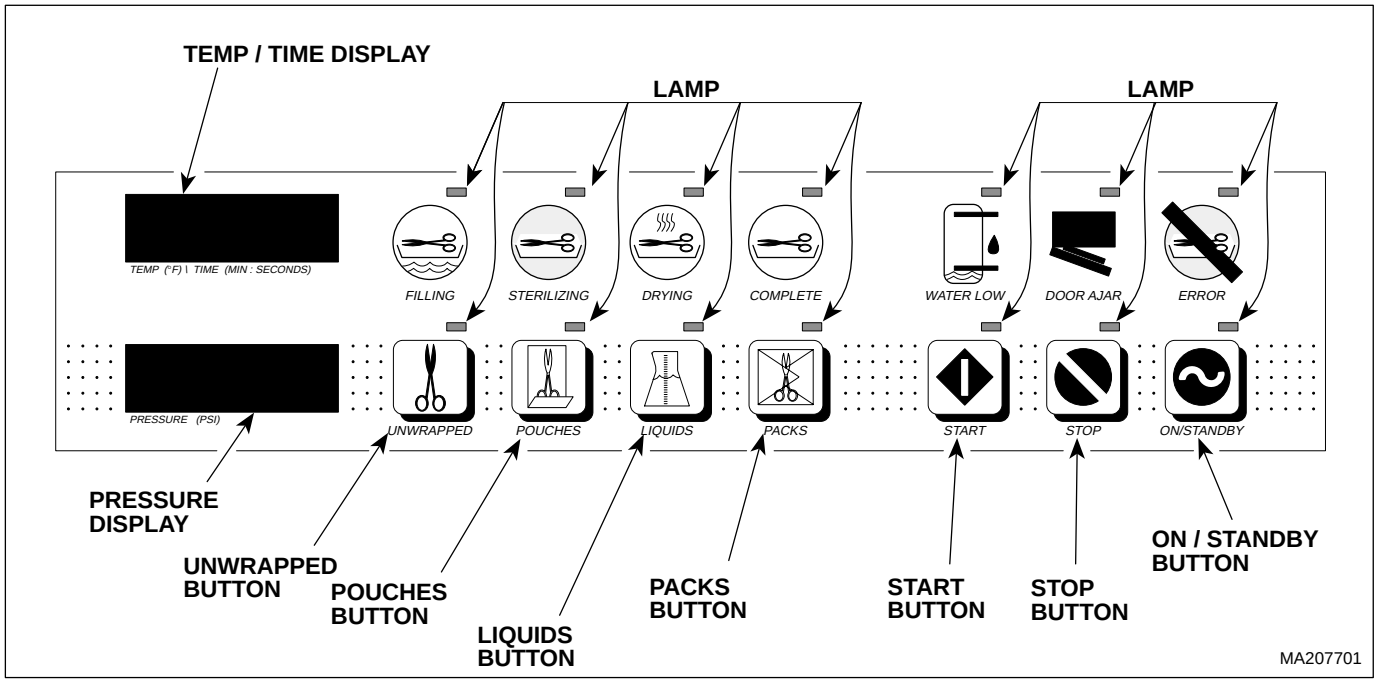

Figure 4-33. M9 / M11 Door Opening Test

SECTION V
SCHEMATICS AND DIAGRAMS

5.1 Wiring Diagrams

Figure 5-1 (sheets 1 thru 3) illustrate the wiring connections for the M9 sterilizer.

Figure 5-2 (sheets 1 & 2) illustrate the wiring connections for the M9D sterilizer.

Figure 5-3 (sheets 1 thru 3) illustrate the wiring connections for the M11 sterilizer.

Figure 5-4 (sheets 1 & 2) illustrate the wiring connections for the M11D sterilizer.

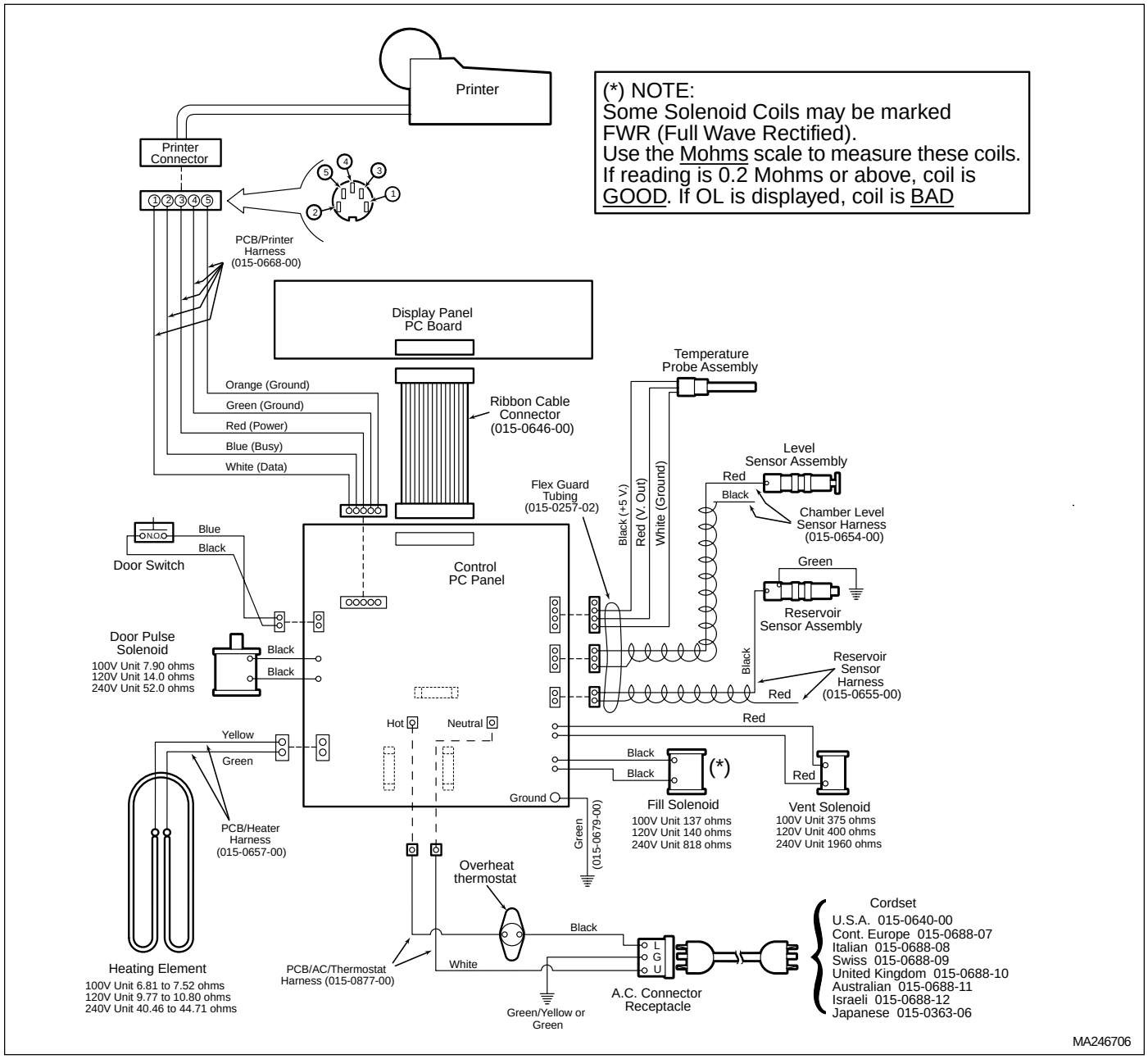

Figure 5-1 (Sheet 1 of 3). M9 Wiring Diagram
(Applies To Serial Numbers CZ1000 thru CZ1684, DB1000 thru DB1010, OM1000 thru OM5130, DX1000 thru DX1170, DA1000 thru DA1001, and DY1000 thru DY1007)

SECTION V
SCHEMATICS AND DIAGRAMS

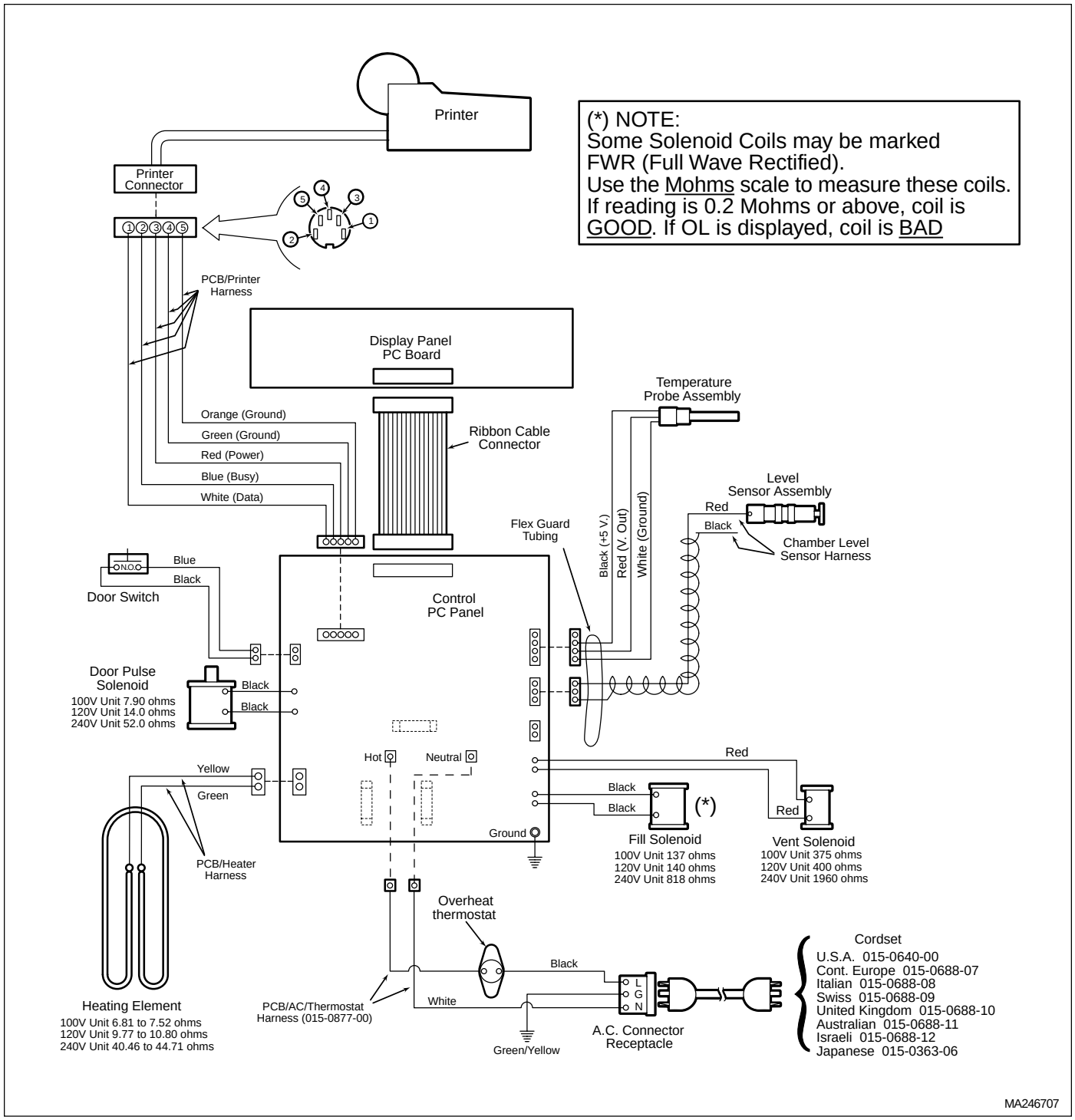

Figure 5-1 (Sheet 2 of 3) M9 Wiring Diagram
(Applies To Serial Numbers CZ1685 thru CZ4590, DB1011 thru DB1149, OM5131 thru OM14723, DX1171 thru DX1969, DA1002 thru DA1004, and DY1008 thru DY1138)

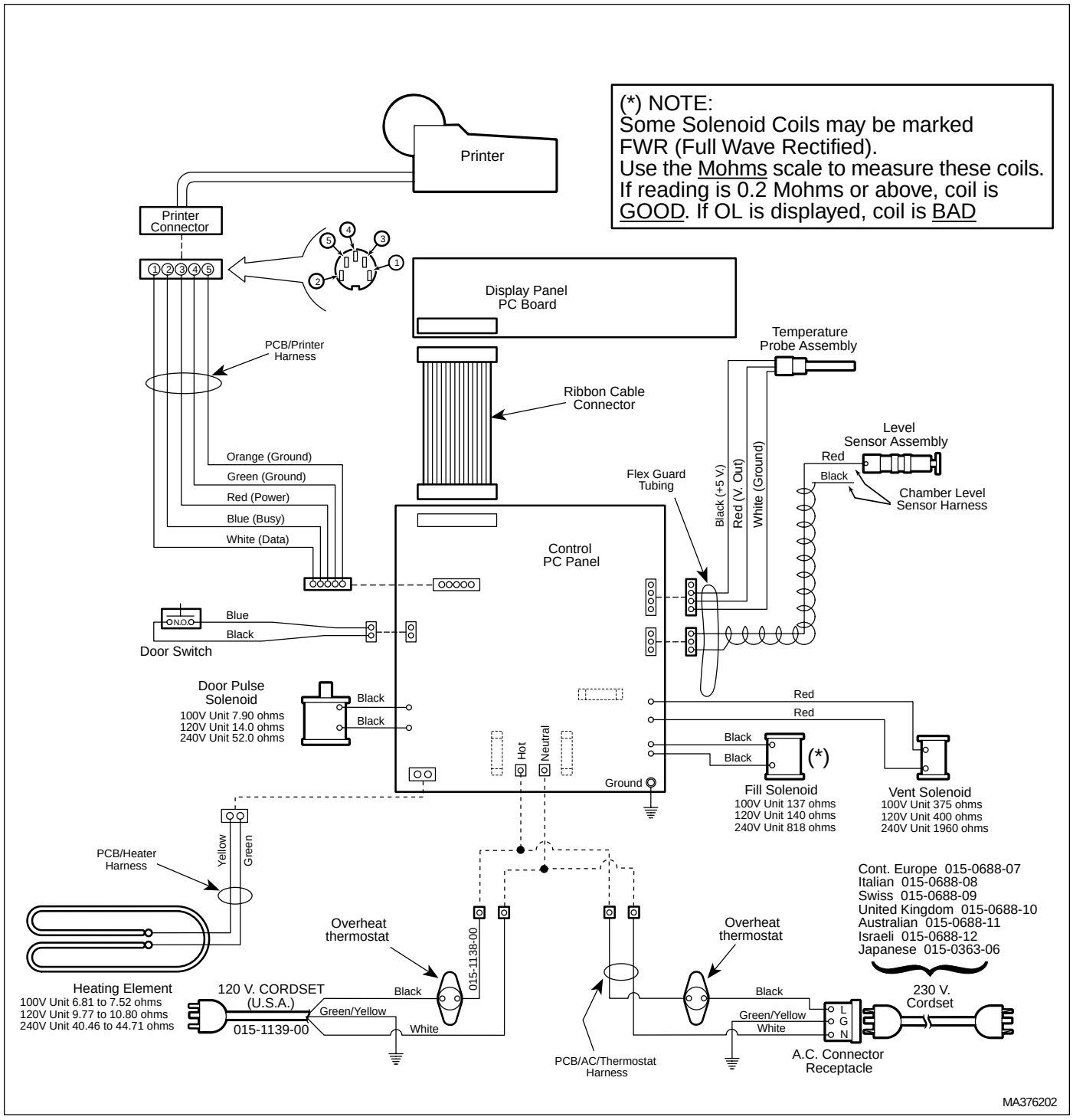

Figure 5-1 (Sheet 3 of 3) M9 Wiring Diagram
(Applies To Serial Numbers CZ4591 thru Present, DA1005 thru Present, DB1150 thru Present, DX1970 thru Present, DY1139 thru Present, FD1000 thru Present, and OM14724 thru Present)

SECTION V
SCHEMATICS AND DIAGRAMS

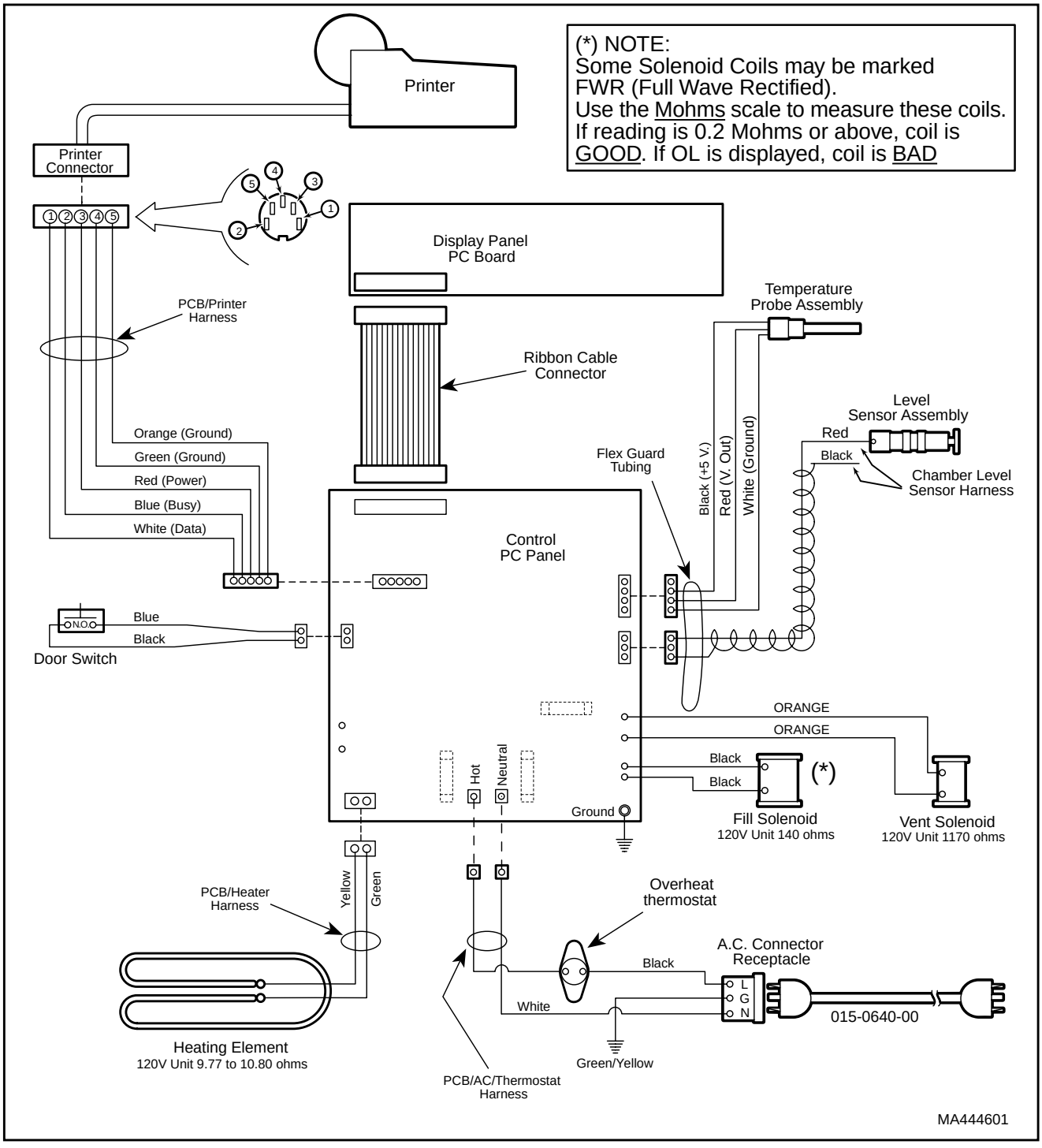

Figure 5-2 (Sheet 1 of 2) M9D Wiring Diagram
(Applies To Serial Numbers FF1000 thru FF1054, FG1000 thru FG1137)

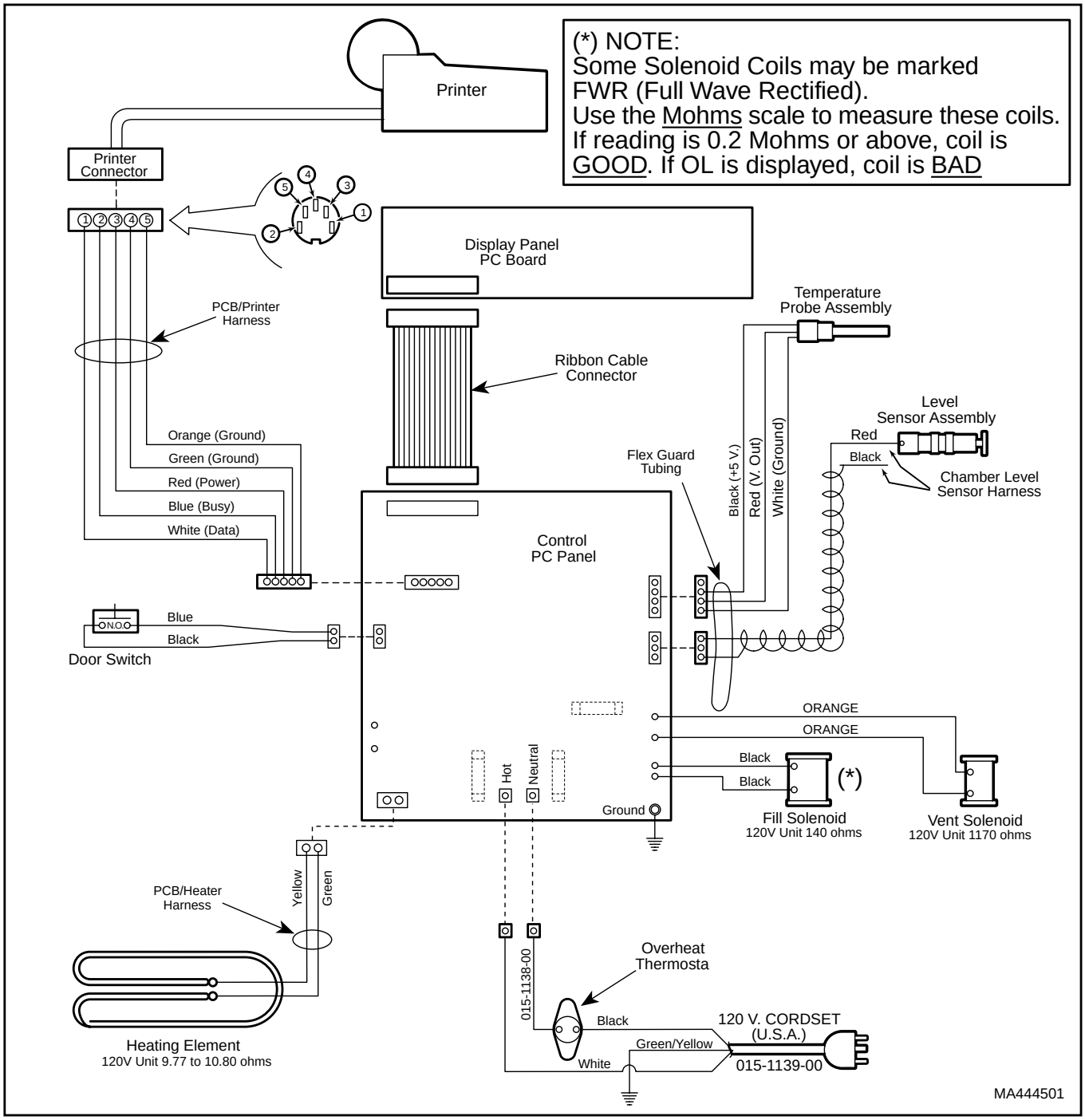

Figure 5-2 (Sheet 2 of 2) M9D Wiring Diagram
(Applies To Serial Numbers FF1055 thru Present and FG1138 thru Present)

SECTION V
SCHEMATICS AND DIAGRAMS

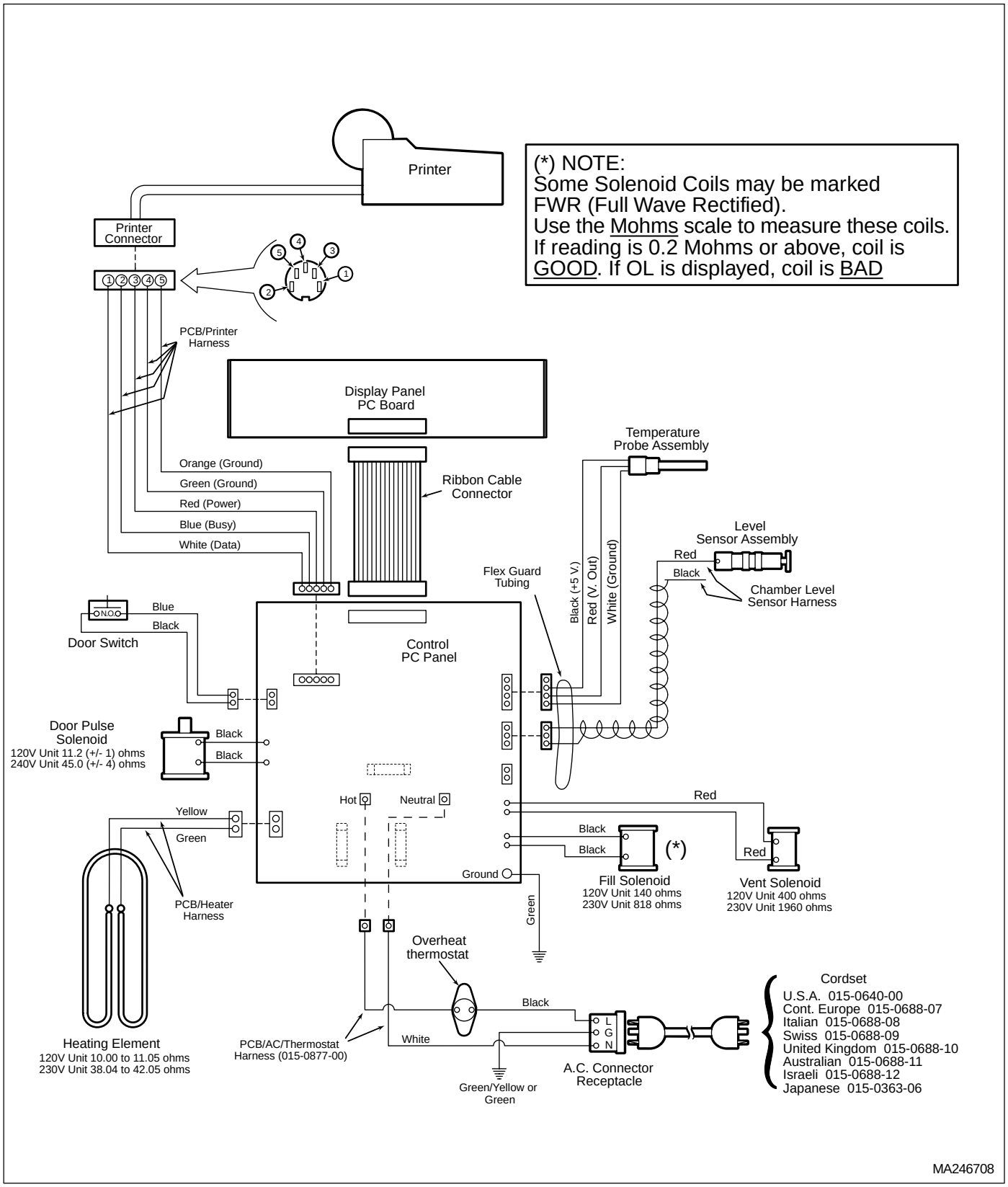

Figure 5-3. (Sheet 1 of 3) M11 Wiring Diagram
(Applies to Units With Serial Numbers ES-1000 Thru ES-1346 And ET-1000 Thru ET1094)

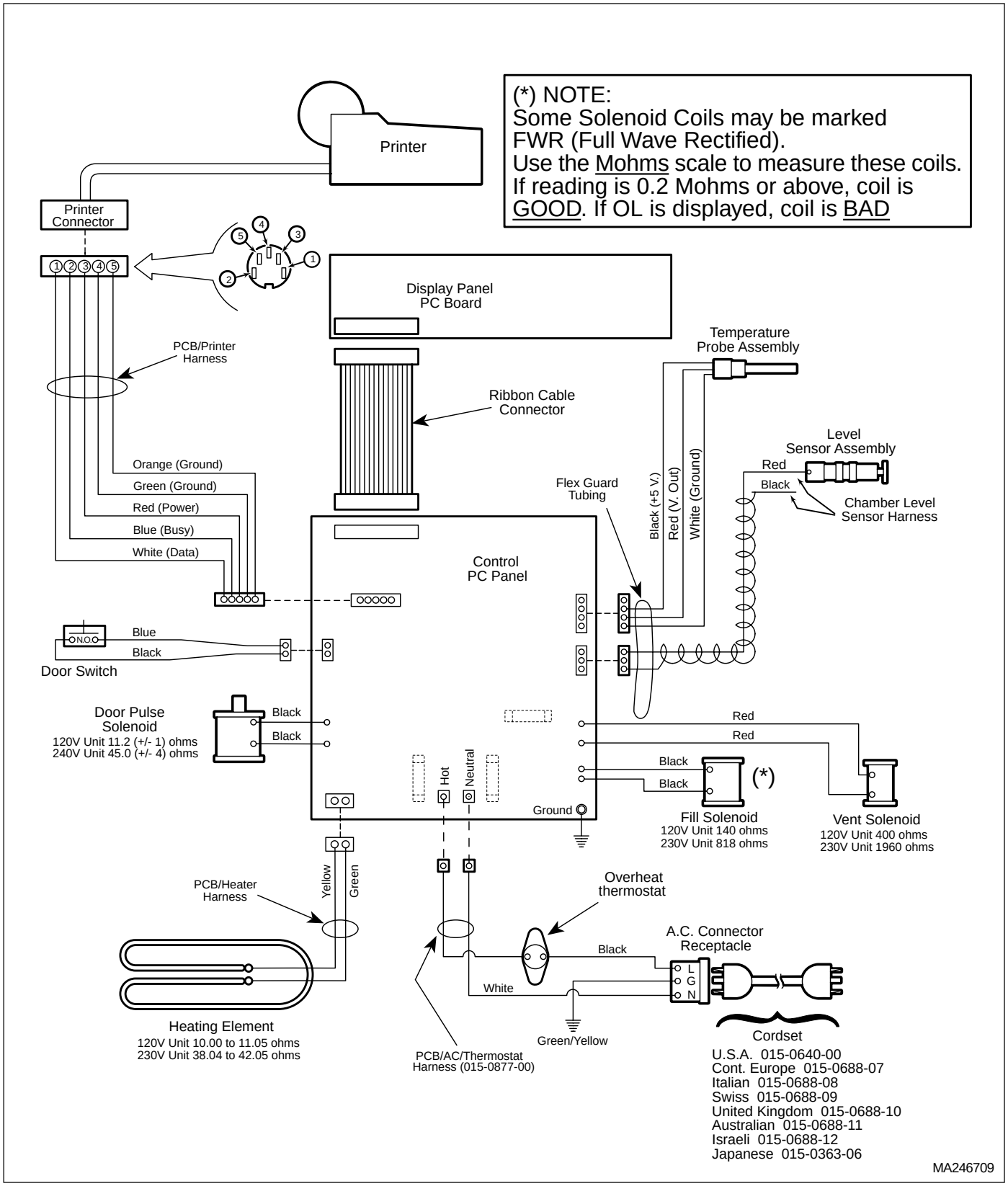

Figure 5-3. (Sheet 2 of 3) M11 Wiring Diagram
(Applies to Units With Serial Numbers ES1347 thru ES3020 and ET1095 thru ET3317)

SECTION V
SCHEMATICS AND DIAGRAMS

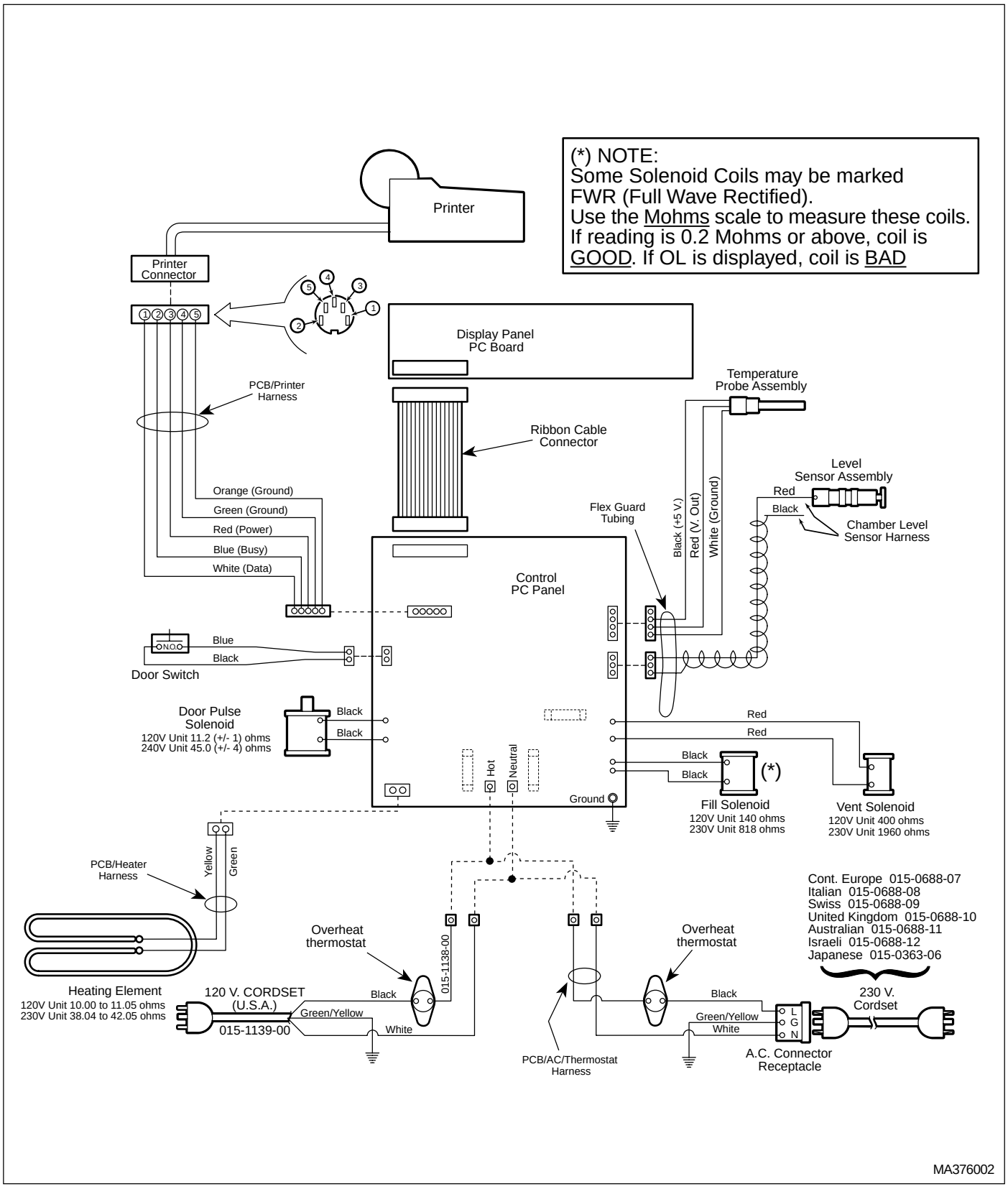

Figure 5-3. (Sheet 3 of 3) M11 Wiring Diagram
(Applies to Units With Serial Numbers ES3021, ET3318, FP1000, FR1000, and GB1000 Thru Present)

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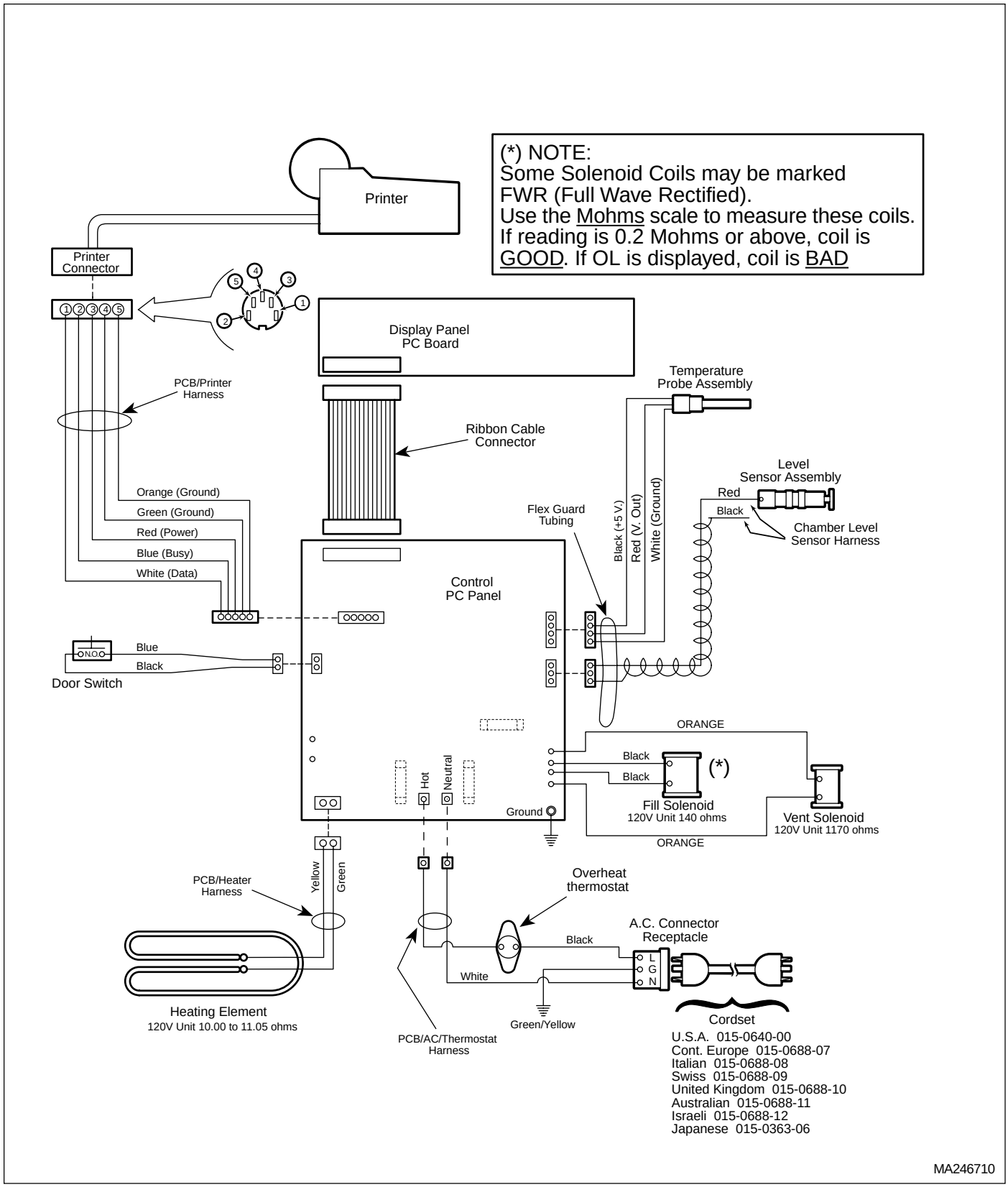

Figure 5-4. (Sheet 1 of 2) M11D Wiring Diagram
(Applies to Units With Serial Numbers GC1000 thru GC1018 and GD1000 Thru GD1015)

SECTION V
SCHEMATICS AND DIAGRAMS

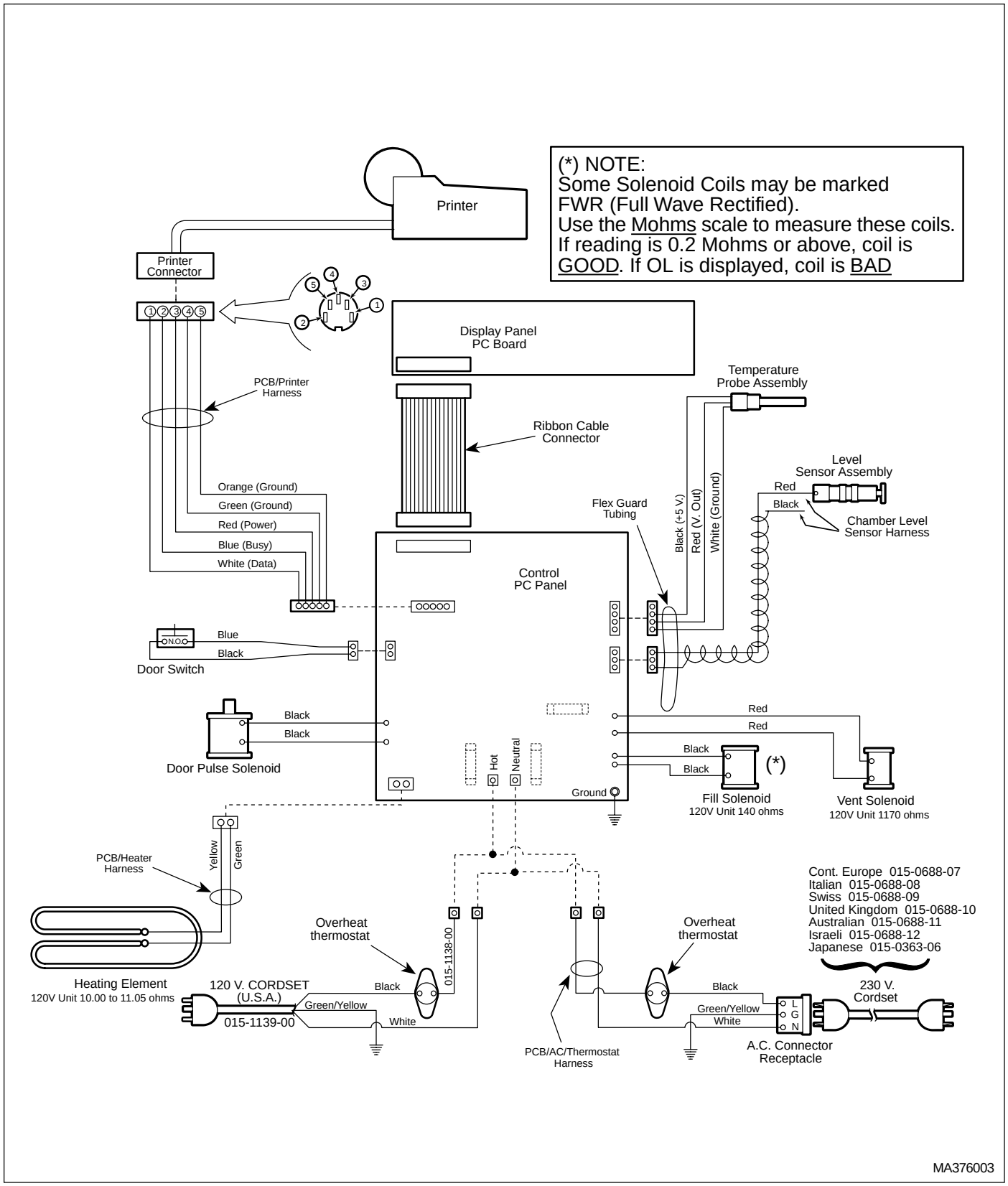

Figure 5-4. (Sheet 2 of 2) M11D Wiring Diagram
(Applies to Units With Serial Numbers GC1019, and GD1016 Thru Present)

5.2 Flow Diagram

Figure 5-5 illustrates the water, heated water, steam, and vented steam/water flow throughout the sterilizer during a cycle.

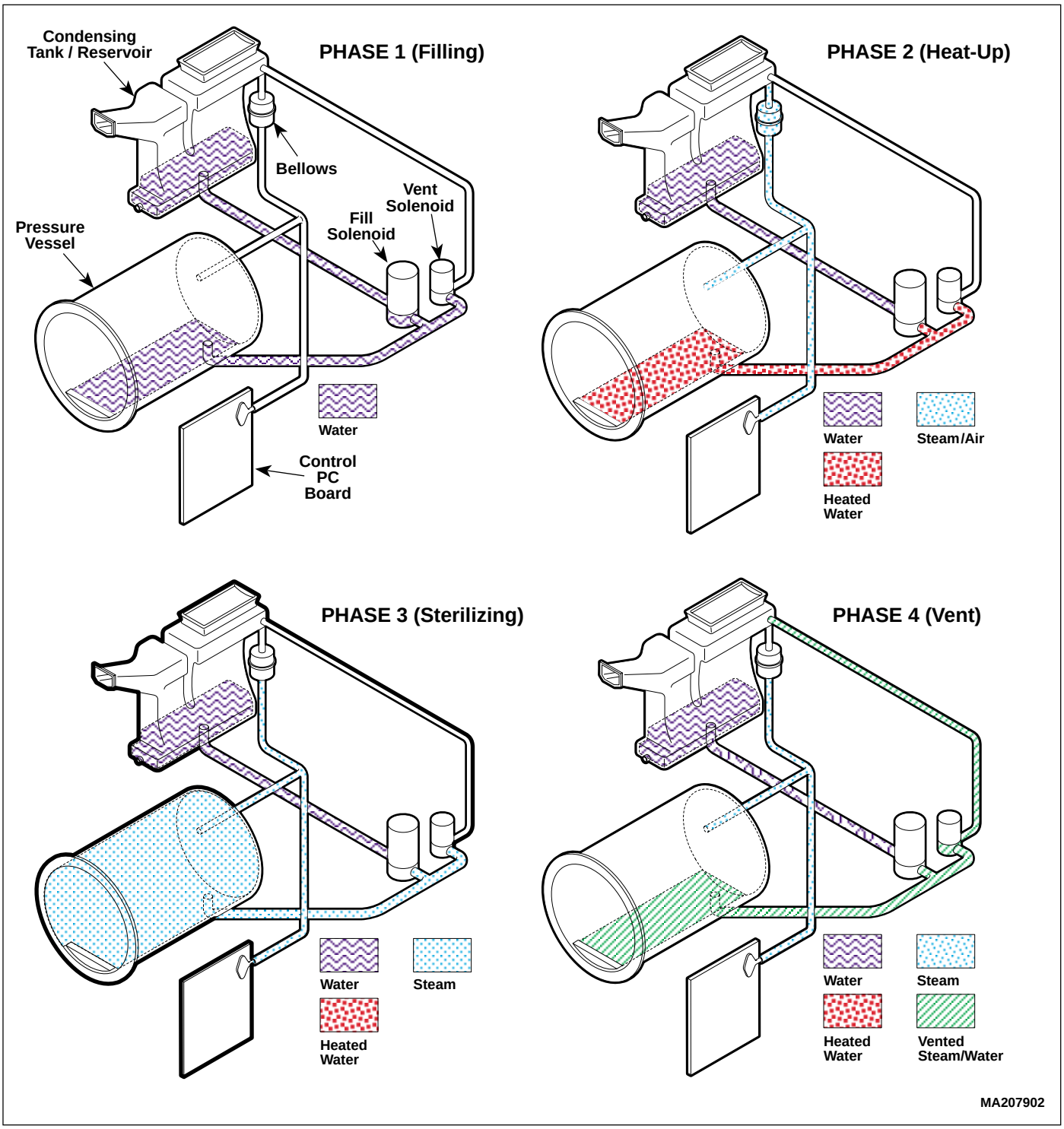

Figure 5-5. Flow Diagram

SECTION V
SCHEMATICS AND DIAGRAMS

5.3 Pressure / Temperature Chart

Table 5-1 is a chart which lists what pressure should be present at particular temperature.

Table 5-1. Pressure / Temperature Chart

PSI	°C	°F	PSI	°C	°F
0	100.0	212.0	16	122.0	251.6
1	101.9	215.4	17	123.0	253.4
2	103.6	218.5	18	124.1	255.4
3	105.3	221.5	19	125.0	257.0
4	106.9	224.4	20	126.0	258.8
5	108.4	227.1	21	126.9	260.0
6	109.8	229.6	22	127.8	262.0
7	11.3	232.3	23	128.7	263.7
8	112.6	234.7	24	129.6	265.3
9	113.9	237.0	25	130.4	266.7
10	115.2	239.4	26	131.3	268.3
11	116.4	241.5	27	132.1	269.8
12	117.6	243.7	28	132.9	271.2
13	118.8	245.8	29	133.7	272.7
14	119.9	247.8	30	134.5	274.1
15	121.0	249.8			

Normal steam sterilizing range is 250 °F to 270 °F.

Figures in chart are for steam pressure only. The presence of any air in the autoclave invalidates temperature readings.

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SECTION VI
PARTS LIST

6.1 Description of Bullets

If a component has a bullet [•] in the *Part No.* column and the *Description* column, it is a subcomponent of an assembly in the parts list.

6.2 Torque Specifications and Important Assembly Notes

Required torque specifications, measurements, and procedures will be noted on the parts illustrations. Adherence to these requirements is essential.

Attention!

The Parts Lists in this manual are separated as shown below. Verify model number, then refer to appropriate pages.

M9 / M9D ..... Pages 6-2 thru 6-16

M11 / M11D ..... Pages 6-17 thru 6-31

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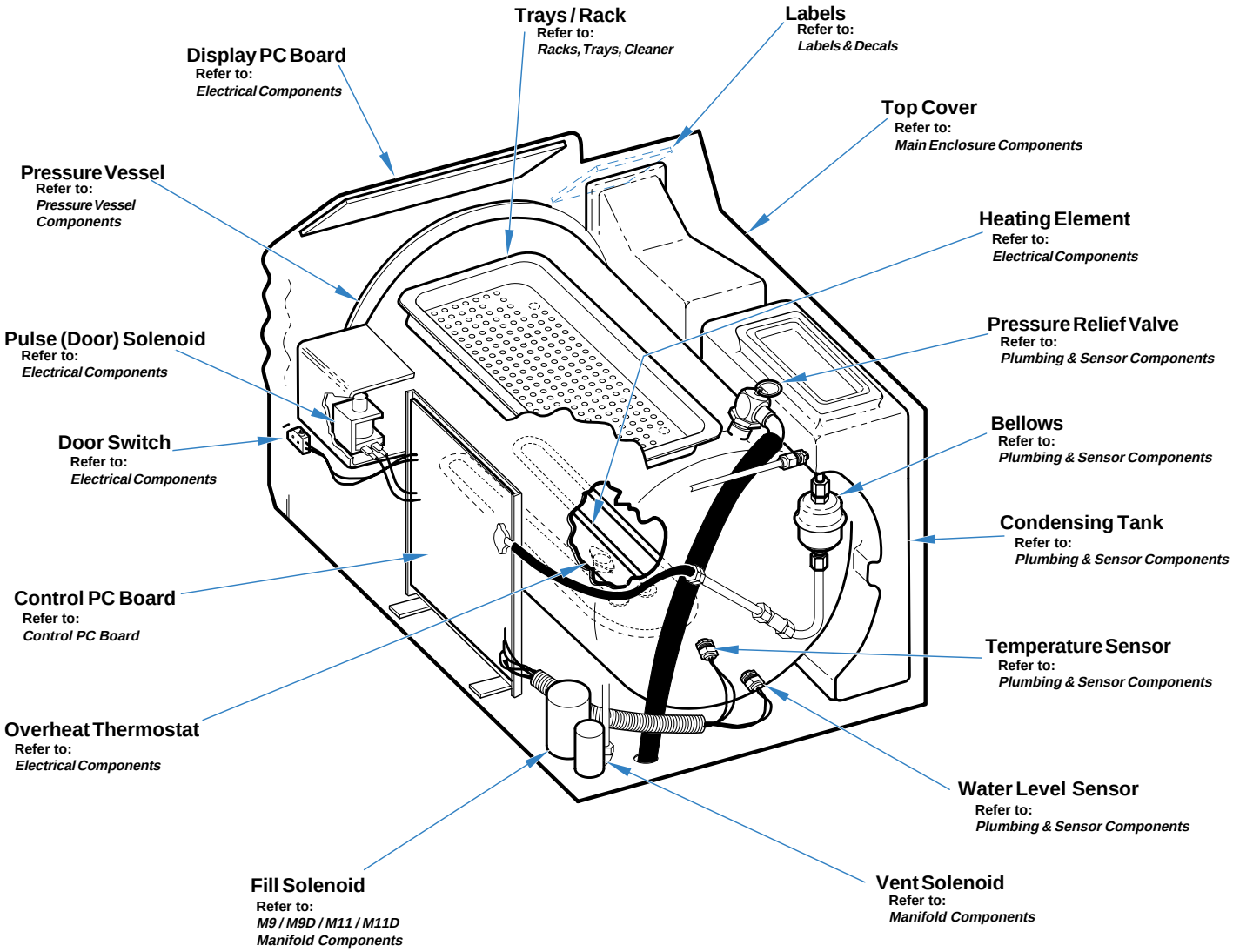
M9 Component / Page Cross-Reference



MA600700i

Item	Model No.	Description	Page
	M9-001	Ritter M9 Ultraclave (115 VAC) *[serial number prefix "OM"]*	6-2
	M9-002	Ritter M9 Ultraclave (230VAC) *[serial number prefix "DY"]*	6-2
	M9-003	Midmark M9 Ultraclave (115 VAC) *[serial number prefix "CZ"]*	6-2
	M9-004	Midmark M9 Ultraclave (230 VAC) *[serial number prefix "DX"]*	6-2
	M9-005	Ritter M9 Ultraclave (100 VAC) *[serial number prefix "DB"]*	6-2
	M9-006	Ritter M9 Ultraclave (100VAC) *[serial number prefix "DA"]*	6-2
	M9-007	EMS M9 Ultraclave (230 VAC) *[serial number prefix "FD"]*	6-2
	M9-008	Dabi Atlante M9 Ultraclave (115 VAC) *[serial number prefix "FK"]*	6-2
	M9-009	Dabi Atlante M9 Ultraclave (230 VAC) *[serial number prefix "FL"]*	6-2
	M9-010	Polish M9 Ultraclave (230 VAC) *[serial number prefix "LA"]*	6-2

Always Specify Model & Serial Number

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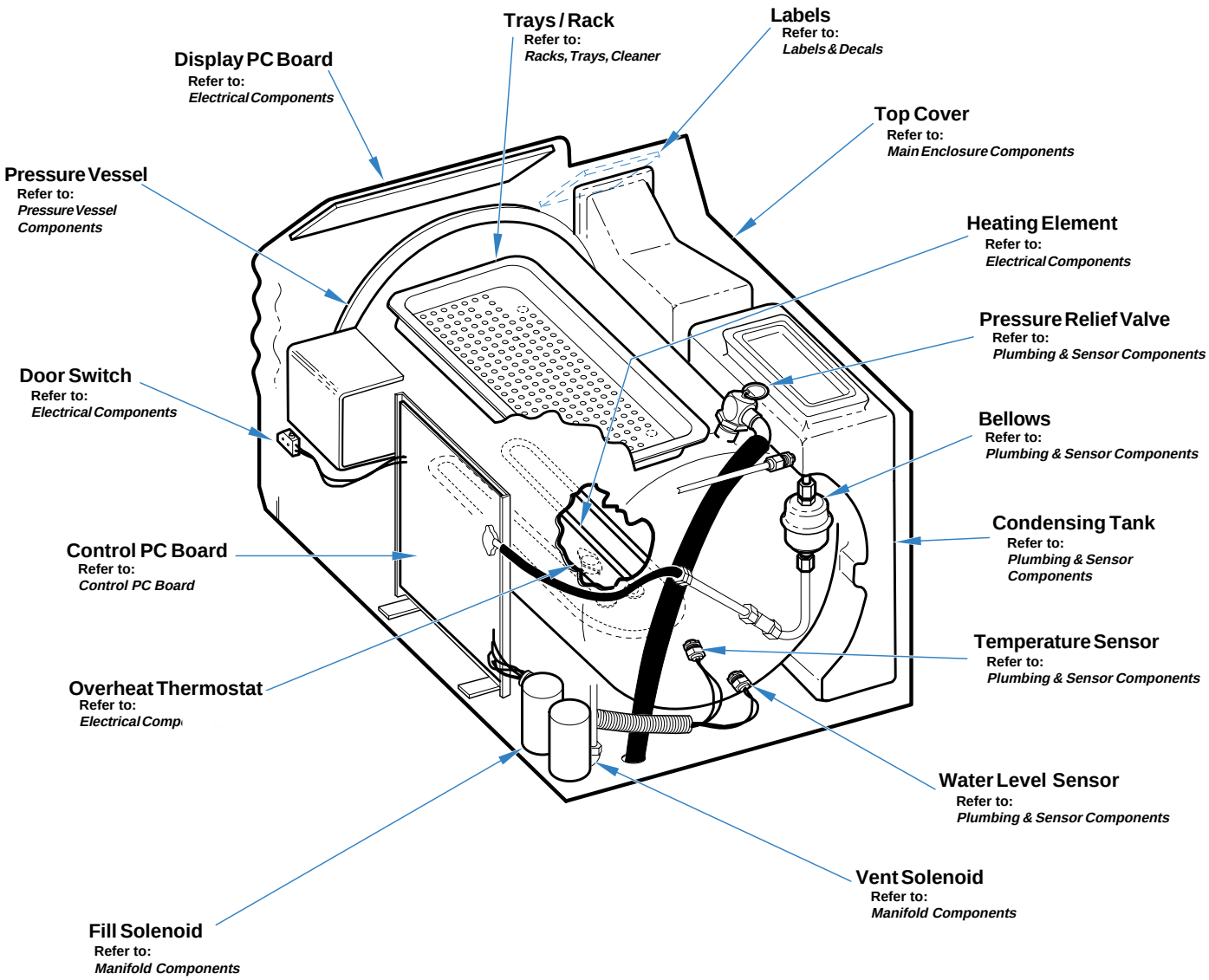
M9D Component / Page Cross-Reference



MA600800i

Item	Model No.	Description	Page	Item	Model No.	Description	Page
	M9D-001	Ritter M9D Ultraclave (115 VAC) *[serial number prefix "FF"]*	6-3		M9D-002	Midmark M9D Ultraclave (115 VAC) *[serial number Prefix "FG"]*	6-3

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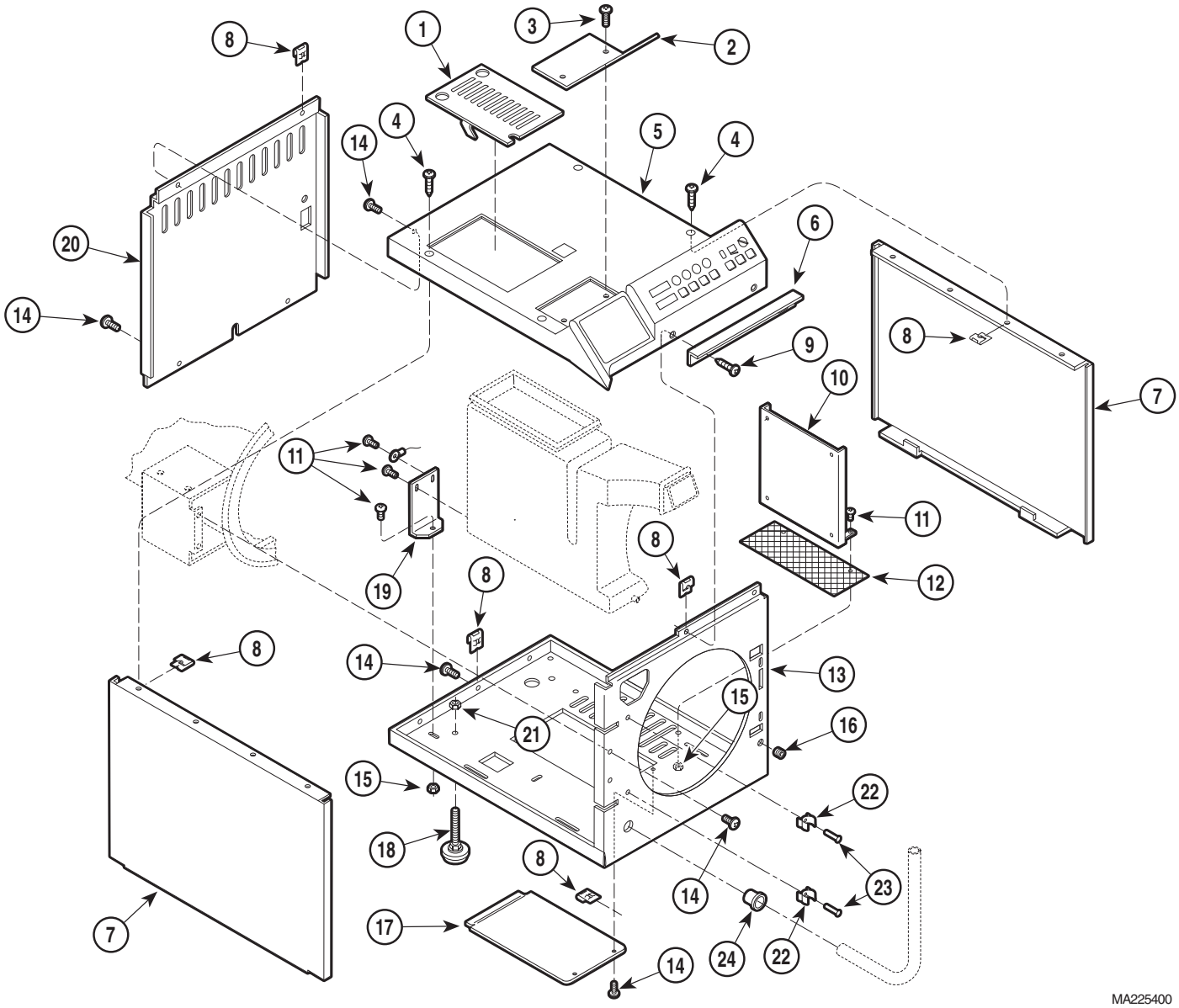
Main Enclosure Components



Used on units with Serial Numbers:
CZ1000 thru CZ1456 OM1000 thru OM3287

Item	Part No.	Description	Qty.
1	030-0765-10	Top Inspection Cover	1
2	050-1775-10	Cover Plate - Printer	1
3	040-0008-37	Screw	2
4	040-0010-88	Screw	4
5	002-0356-00	Top Cover	1
6	050-2034-00	Top Cover Steam Block	1
7	050-1767-10	Side Panel	2
8	H352623	Tinnerman Clip	12
9	040-0010-95	Screw	2
10	050-1777-00	Control PCB Bracket	1
11	040-0010-75	Screw	5
12	016-0428-01	Screen	1
13	050-2346-00	Base	1
14	040-0010-18	Screw	11
15	041-0010-04	Nut - w/Starwasher	3
16	053-0394-01	Grommet (Early Units Only)	1
17	050-4326-01	Base Inspection Cover	1
18	016-0404-00	Leveler Foot	4
19	050-1778-00	Bracket	1
20	050-1766-10	Back Panel	1
21	041-0312-05	Lock Nut	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	053-0068-11	Strain Relief Bushing	1

Always Specify Model & Serial Number

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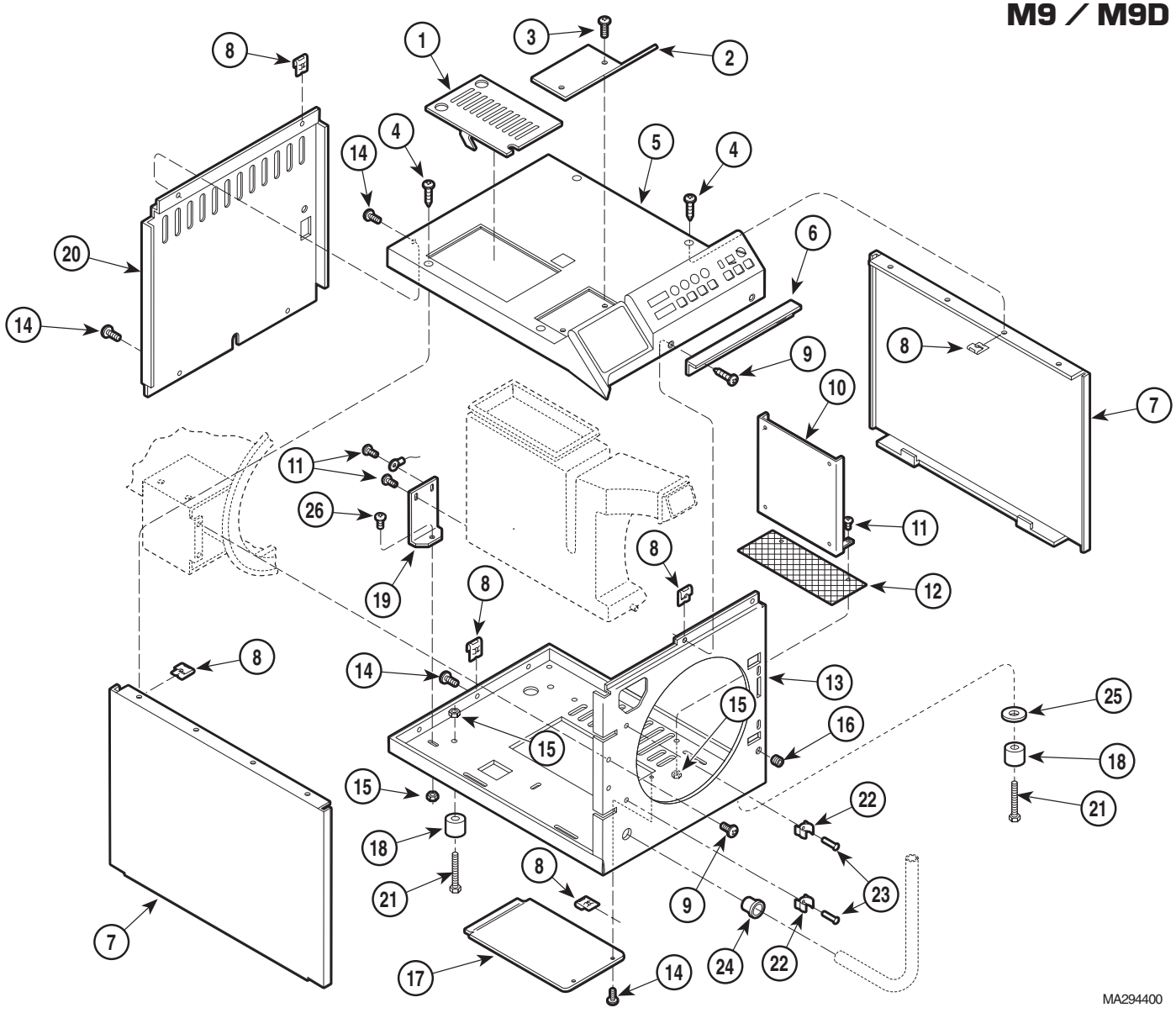
Main Enclosure Components



Used on units with Serial Numbers:

CZ1457 thru CZ2753 DA1000 thru DA1004 DB1000 thru DB1149 DX1000 thru DX2131
DY1000 thru DY1149 FD1000 thru FD1099 OM3288 thru OM10596

Item	Part No.	Description	Qty.
1	030-0765-10	Top Inspection Cover	1
2	050-1775-10	Cover Plate - Printer	1
3	040-0008-50	Screw	2
4	040-0010-88	Screw	4
5	002-0356-00	Top Cover (Domestic - English)	1
	002-0356-01	Top Cover (Metric - English)	1
6	050-2034-00	Top Cover Steam Block	1
7	050-1767-10	Side Panel	2
8	H352623	Tinnerman Clip	13
9	040-0010-95	Screw	6
10	050-1777-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-01	Screen	1
13	050-2518-00	Base	1
14	040-0010-18	Screw	7
15	041-0010-04	Nut - w/Starwasher	3
16	053-0394-01	Grommet (Early Units Only)	1
17	050-4326-01	Base Inspection Cover	1
18	016-0523-00	Leveler Foot	4
19	050-1778-00	Bracket	1
20	050-1766-10	Back Panel	1
21	040-0010-43	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	053-0068-11	Strain Relief Bushing	1
25	045-0001-00	Washer	4
26	040-0010-74	Screw	2

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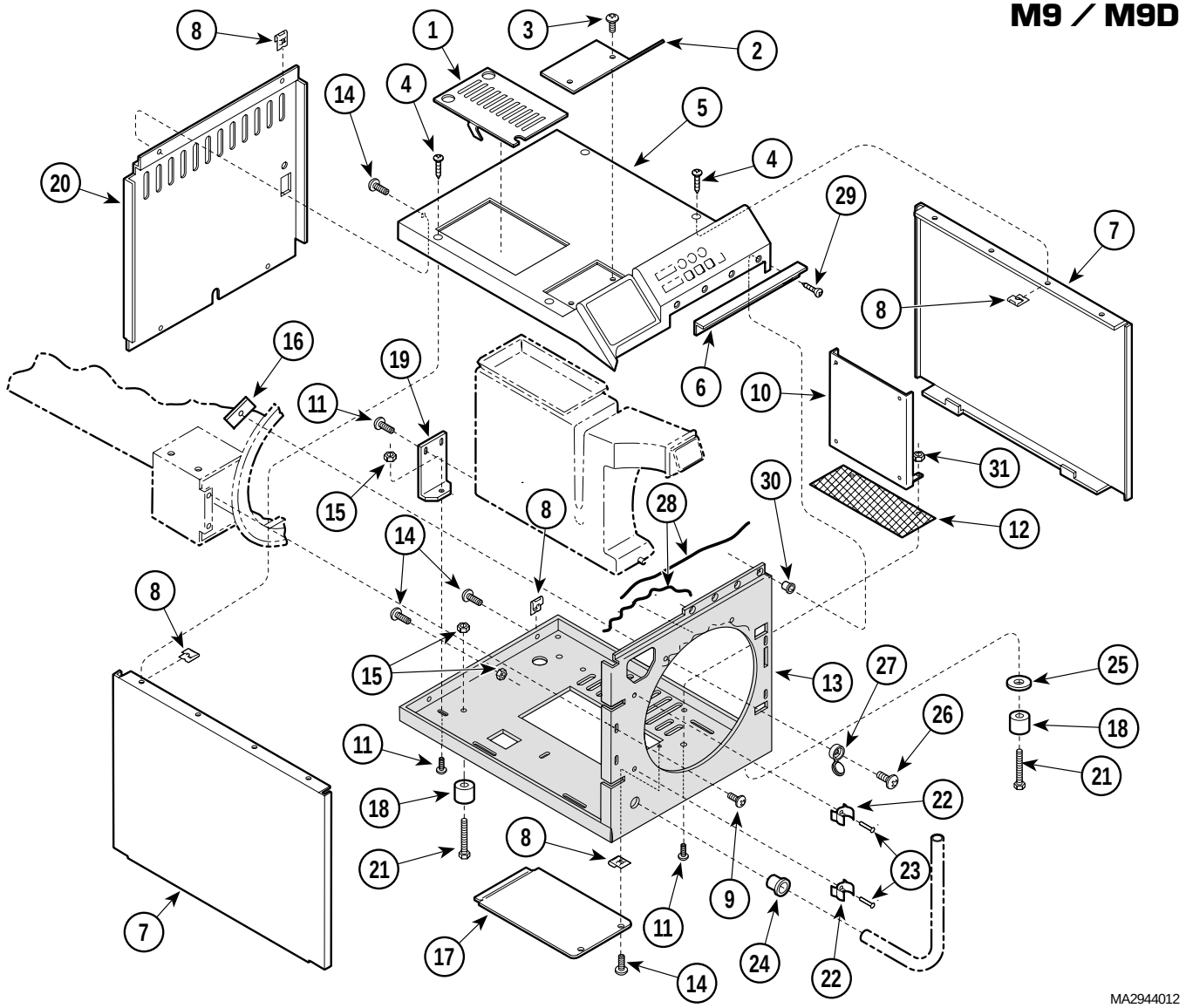
Main Enclosure Components



MA2944012

Used on units with Serial Numbers:

CZ2754 thru CZ4530 DB1150 thru DB1237 DX2132 thru DX2588 DY1150 thru DY1178
FD1100 thru FD1499 FF1000 thru FF1039 FG1000 thru FG1127 FK1000 thru FK1749
FL1000 thru FL1474 OM10597 thru OM14666

Item	Part No.	Description	Qty.
1	030-1117-00	Top Inspection Cover	1
2	050-1775-00	Cover Plate - Printer	1
3	040-0008-50	Screw	2
4	040-0010-88	Screw	4
5	002-0356-00	Top Cover (Domestic - English)	1
	002-0356-01	Top Cover (Metric - English)	1
	002-0356-02	Top Cover (Metric - French)	1
6	050-2034-00	Top Cover Steam Block	1
7	050-1767-00	Side Panel	2
8	H352623	Tinnerman Clip	10
9	040-0010-95	Screw	4
10	050-3996-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-04	Screen	1
13	050-3605-00	Base	1
14	040-0010-125	Screw	7
15	041-0010-02	Nut	6
16	050-4750-00	Flange Clamp	2
17	050-4326-01	Base Inspection Cover	1
18	016-0523-01	Leveler Foot	4
19	050-1778-00	Bracket	1
20	050-3524-00	Back Panel	1
21	040-0010-44	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	053-0068-11	Strain Relief Bushing	1
25	045-0001-00	Washer	4
26	040-0010-124	Screw	2
27	053-0723-00	Screw Cover	2
28	042-0021-00	Adhesive	AR
29	040-0010-113	Screw	2
30	042-0045-01	Nutsert	2
31	041-0010-04	Nut	2

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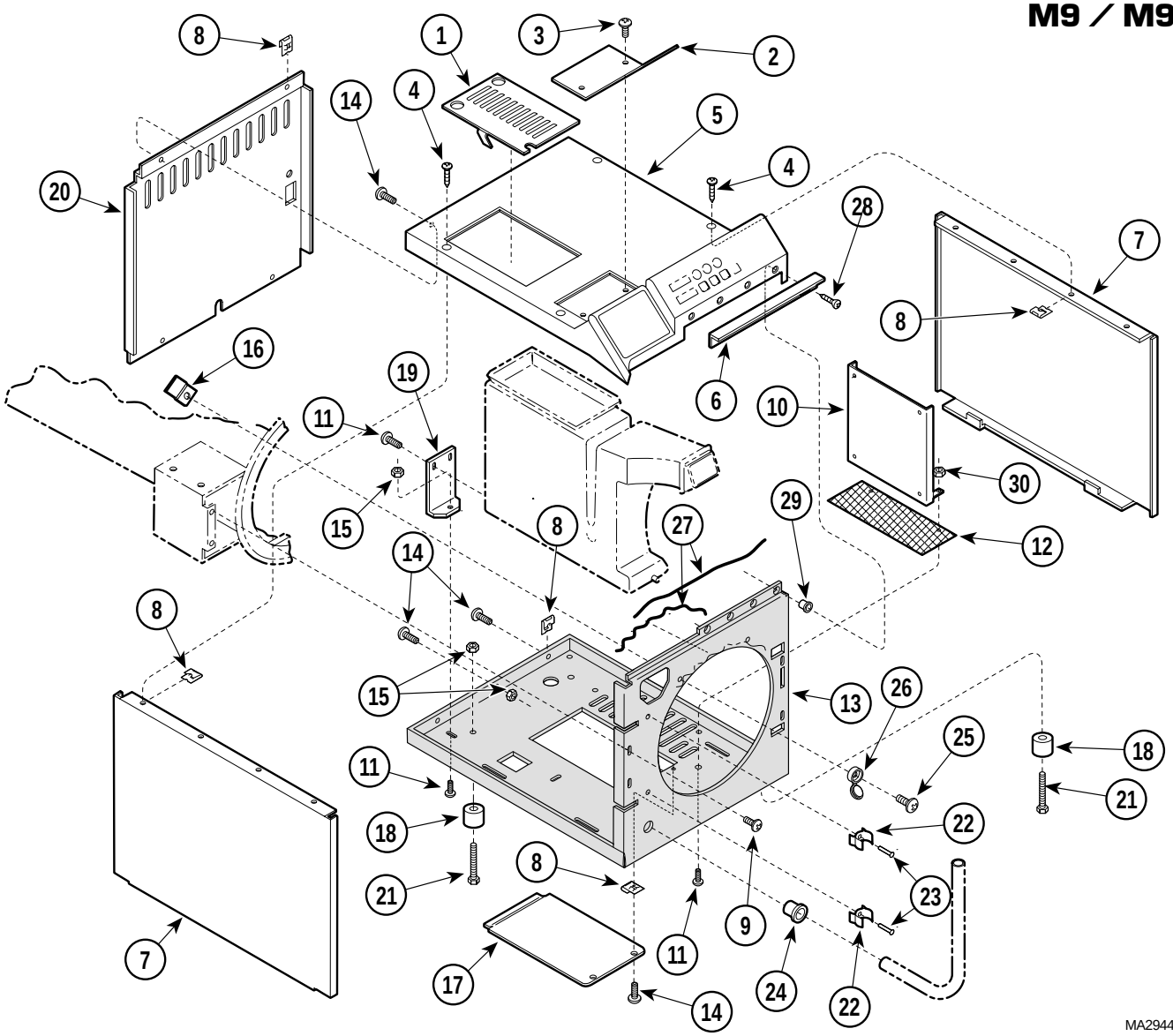
Main Enclosure Components



Used on units with Serial Numbers:
CZ4531, DA1005, DB1238, DX2589, DY1179, FD1500, FF1040, FG1128, FK1750, FL1475, FX1000, FY1000, LA1000 and OM14667 - thru Present

Item	Part No.	Description	Qty.
1	030-1117-00	Top Inspection Cover	1
2	050-1775-00	Cover Plate - Printer	1
3	040-0008-50	Screw	2
4	040-0010-88	Screw	4
5	002-0356-00	M9 Top Cover (Domestic - English)	1
	002-0356-01	M9 Top Cover (Metric - English)	1
	002-0356-02	M9 Top Cover (Metric - French)	1
	002-0520-00	M9D Top Cover	1
6	050-2034-00	Top Cover Steam Block	1
7	050-1767-00	Side Panel	2
8	H352623	Tinnerman Clip	10
9	040-0010-95	Screw	5
10	050-3996-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-04	Screen	1
13	050-4325-00	Base	1
14	040-0010-125	Screw	6
15	041-0010-02	Nut	5
16	050-4750-00	Flange Clamp	2
17	050-4326-00	Base Inspection Cover (1 hole)	1
	050-4326-01	Base Inspection Cover (3 holes)	1
18	016-0523-01	Leveler Foot	4
19	050-1778-00	Bracket	1
20	050-3831-01	Back Panel (120 V.)	1
	050-3831-00	Back Panel (100 V. & 230 V.)	1
21	040-0010-44	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	053-0068-11	Strain Relief Bushing	1
25	040-0010-124	Screw	2
26	053-0723-00	Screw Cover	2
27	042-0021-00	Adhesive	AR
28	040-0010-113	Screw	2
29	042-0045-01	Nutsert	2
30	041-0010-04	Nut	2

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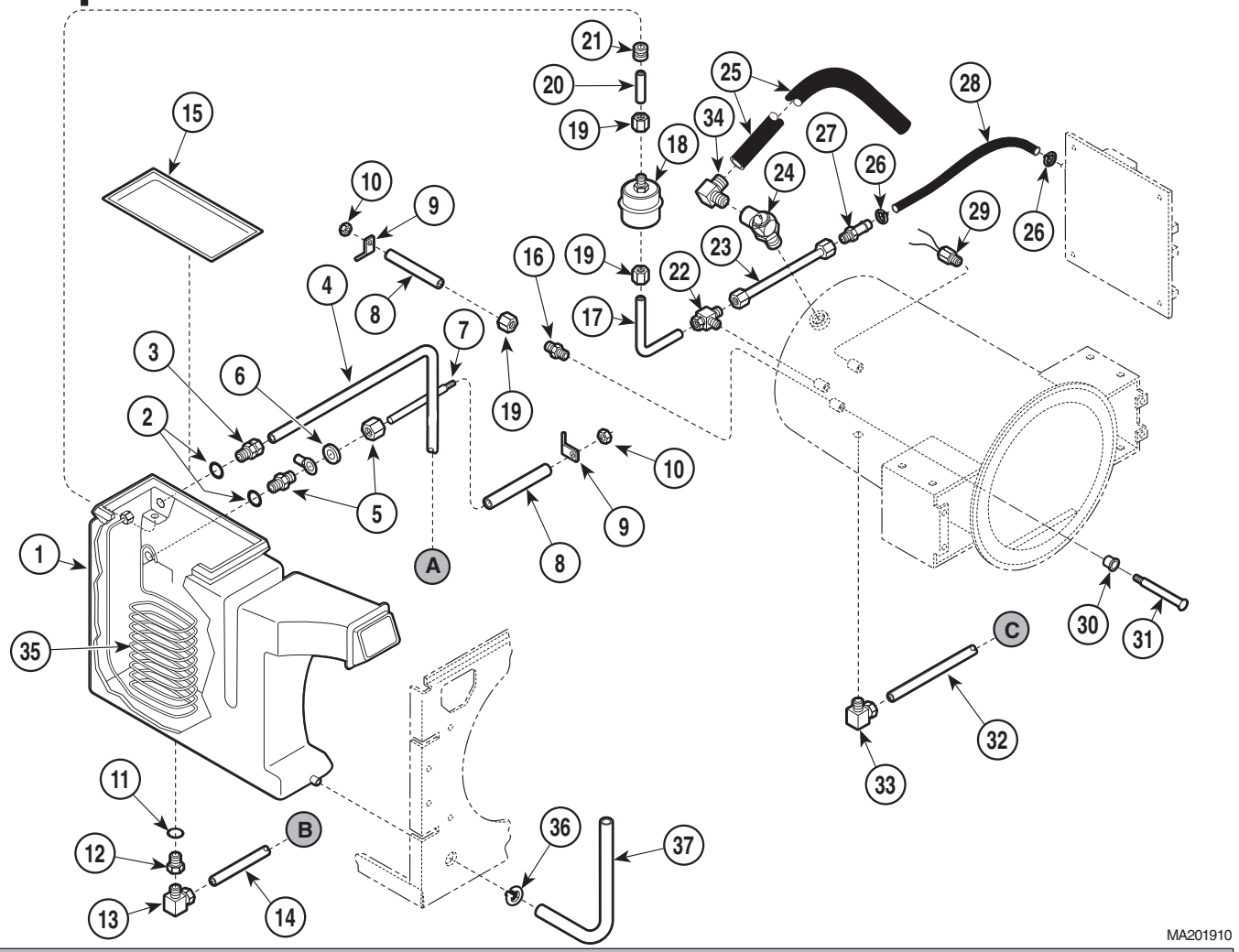
Plumbing & Sensor Components



MA201910

Used on units with Serial Numbers:
CZ1000 thru CZ1119 OM1000 thru OM1352

Item	Part No.	Description	Qty.
1	053-0376-00	Condensing Tank (Includes Item 15)	1
2	053-0392-00	O-ring	2
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube	1
5	014-0215-00	Union Drilled (Includes Sleeve)	1
6	045-0001-56	Lockwasher	1
7	057-0273-01	Level Sensor Rod	1
8	053-0390-01	Level Sensor Tube(Refer to Kit [**])	1
9	015-0595-00	Terminal (Refer to Kit [**])	2
10	041-0006-02	Locknut (Refer to Kit [**])	2
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15		Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector (Refer to Kit [**])	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	053-0394-01	Grommet	1

Item	Part No.	Description	Qty.
22	014-0202-00	Male Branch Tee	1
23	014-0207-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-00	Pressure Relief Valve (35 P.S.I.) (Includes elbow, Item 36)	1
25	053-0403-01	Tube - Pressure Relief	1
26	015-0013-05	High Temp Cable Tie (Refer to Kit [*])	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-01	Tube - PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing (Refer to Kit [**])	1
31	030-0858-00	Level Sensor Assembly (Refer to Kit [**])	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
34	014-0258-00	Male Elbow	1
35	052-0173-00	Condensing Coil	1
36	016-0450-00	Hose Clip	1
37	053-0391-01	Hose	1
[*]	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	
[**]	002-0358-00	Level Sensor Tube Kit (Includes Item 8, 9, 10, 16, 30, and 31))	2

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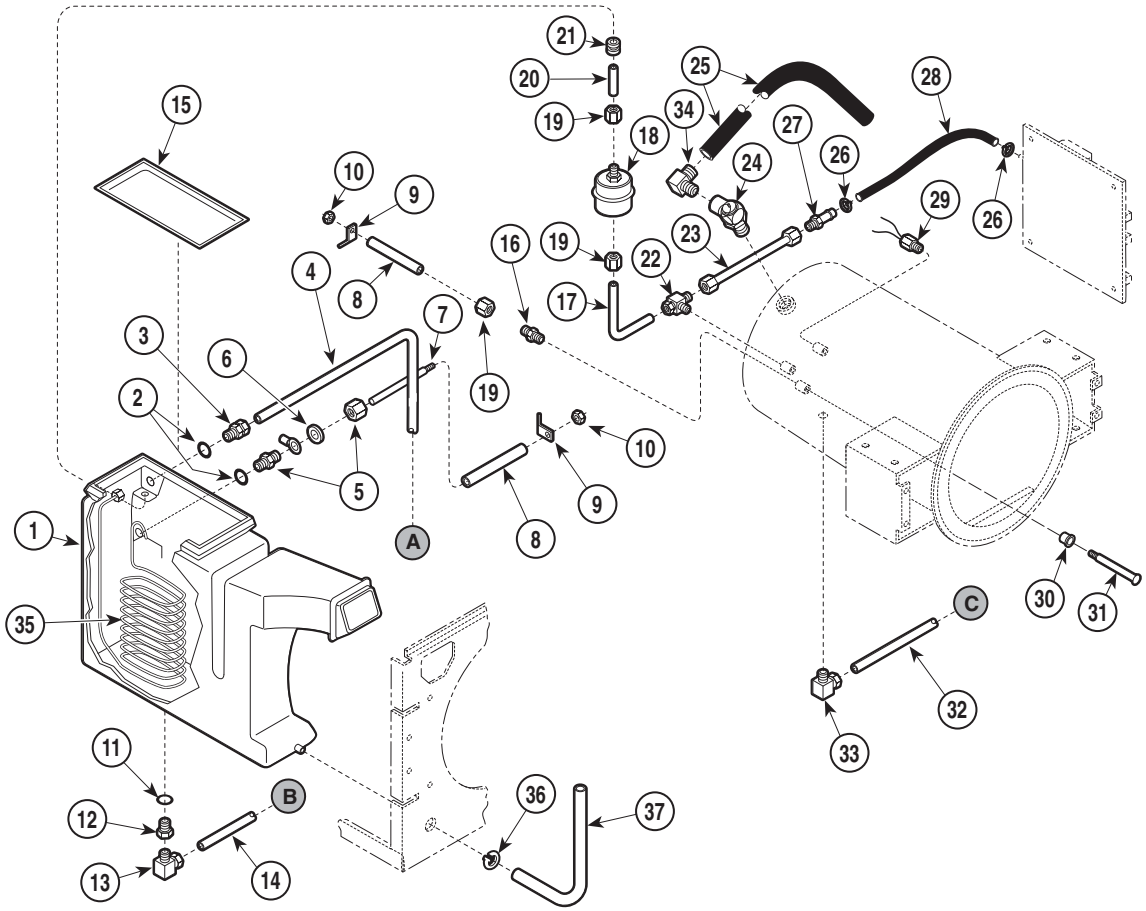
Plumbing & Sensor Components



MA201910

Used on units with Serial Numbers:

CZ1120 thru CZ1684 **DA1000 thru DA1001** **DB1000 *(one unit)***
DX1000 thru DX1100 **OM1353 thru OM4864**

Item	Part No.	Description	Qty.
1	*(N.L.A.)*	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	2
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube	1
5	014-0215-00	Union Drilled (Includes Sleeve)	1
6	045-0001-56	Lockwasher	1
7	057-0273-01	Level Sensor Rod	1
8	053-0390-01	Level Sensor Tube (Refer to Kit [**])	1
9	015-0595-00	Terminal (Refer to Kit [**])	2
10	041-0006-02	Locknut (Refer to Kit [**])	2
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15	*(N.L.A.)*	Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector (Refer to Kit [**])	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	053-0394-01	Grommet	1
22	014-0202-00	Male Branch Tee	1
23	014-0207-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-00	Pressure Relief Valve (35 P.S.I.) (Includes Elbow, Item 36)	1
25	053-0403-02	Tube - Pressure Relief	1
26	015-0013-05	High Temp Cable Tie (Refer to Kit [*])	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-01	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing (Refer to Kit [**])	1
31	030-0858-00	Level Sensor Assembly (Refer to Kit [**])	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
34	014-0258-00	Male Elbow	1
35	052-0173-00	Condensing Coil	1
36	016-0450-00	Hose Clip	1
37	053-0391-01	Hose	1
[*]	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	
[**]	002-0358-00	Lever Sensor Tube Kit (Includes Item 8, 9, 10, 16, 30, and 31)	2

N.L.A. Denotes "No Longer Available"
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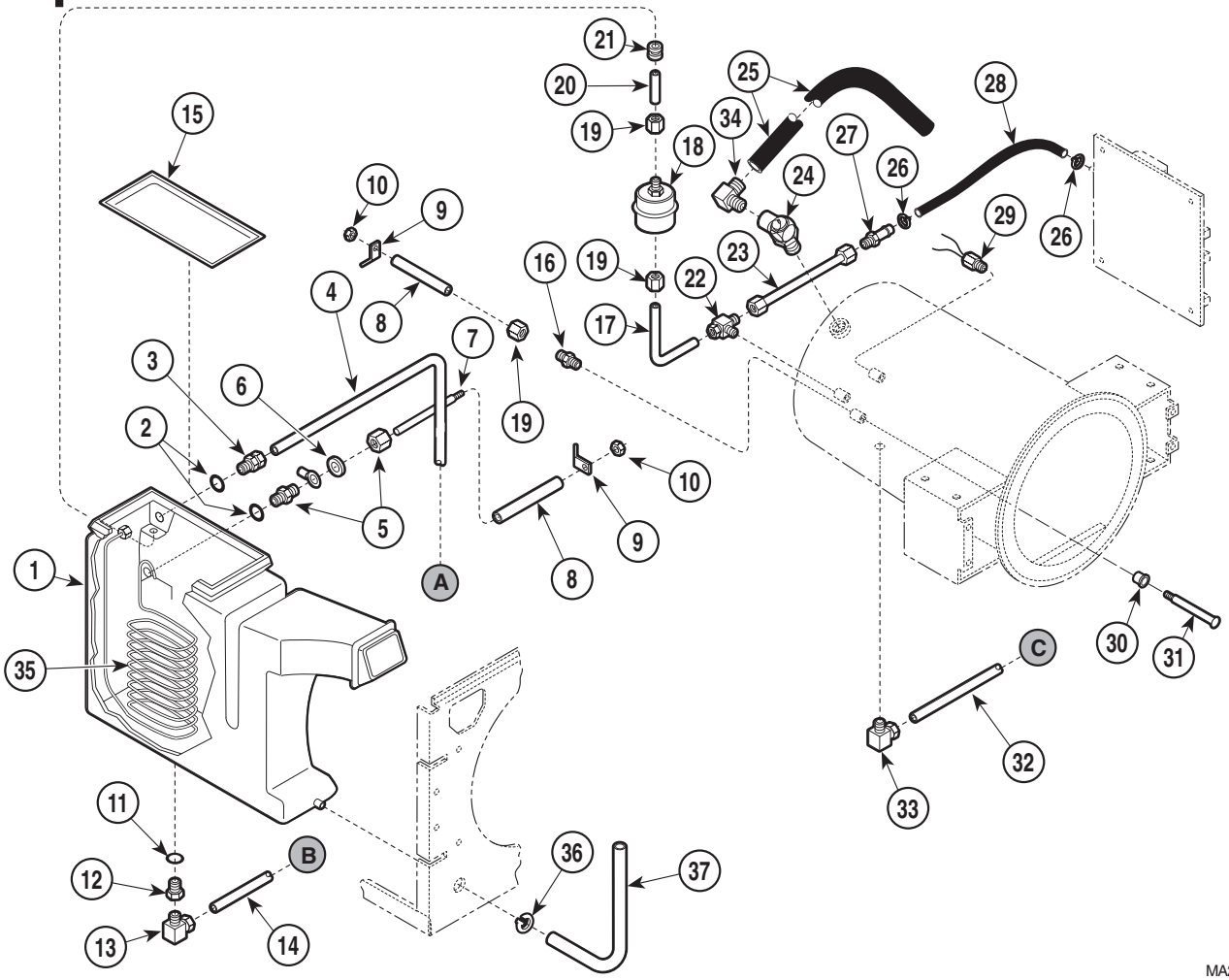
Plumbing & Sensor Components



MA201910

Used on units with Serial Numbers:
DX1101 thru DX1170 DY1000 thru DY1007 OM4865 thru OM5130

Item	Part No.	Description	Qty.
1	*(N.L.A.)*	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	2
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube	1
5	014-0215-00	Union Drilled (Includes Sleeve)	1
6	045-0001-56	Lockwasher	1
7	057-0273-01	Lever Sensor Rod	1
8	053-0390-01	Level Sensor Tube (Refer to Kit [**])	1
9	015-0595-00	Terminal (Refer to Kit [**])	2
10	041-0006-02	Locknut (Refer to Kit [**])	2
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15	*(N.L.A.)*	Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector (Refer to Kit [**])	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	053-0394-01	Grommet	1

Item	Part No.	Description	Qty.
22	014-0202-00	Male Branch Tee	1
23	014-0207-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-00	Pressure Relief Valve (35 P.S.I.) (Includes Elbow, Item 36)	1
25	053-0613-02	Tube - Pressure Relief	1
26	015-0013-05	High Temp Cable Tie (Refer to Kit [*])	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-01	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing (Refer to Kit [**])	1
31	030-0858-00	Level Sensor Assembly (Refer to Kit [**])	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
34	014-0258-00	Male Elbow	1
35	052-0173-00	Condensing Coil	1
36	016-0450-00	Hose Clip	1
37	053-0391-01	Hose	1
[*]	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	
[**]	002-0358-00	Lever Sensor Tube Kit (Includes Item 8, 9, 10, 16, 30, and 31)	2

N.L.A. Denotes "No Longer Available"
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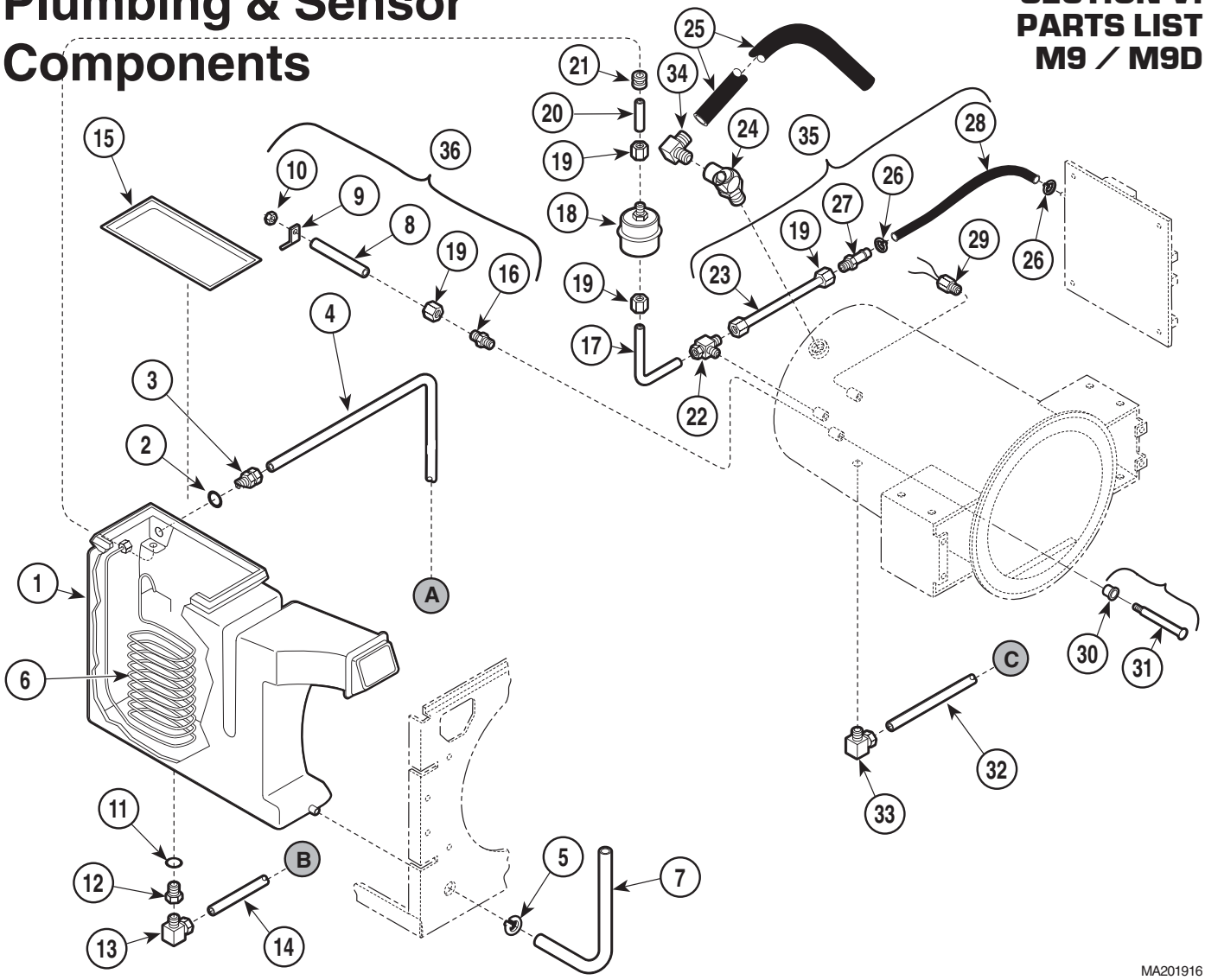
Plumbing & Sensor Components



MA201916

Used on units with Serial Numbers:

CZ1685 thru CZ4334	DA1002 thru DA1004	DB1001 thru DB1237	DX1171 thru DX2555
DY1008 thru DY1176	FD1000 thru FD1399	FF1000 thru FF1034	FG1000 thru FG1112
FK1000 thru FK1699	FL1000 thru FL1474	OM5131 thru OM14524	

Item	Part No.	Description	Qty.
1	053-0614-00	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	1
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube **(M9)**	1
	014-0277-00	Tube **(M9D)**	1
5	016-0450-00	Hose Clip	1
6	052-0173-00	Condensing Coil	1
7	053-0391-01	Hose	1
8	053-0390-01	Level Senor Tube (Refer to Kit [**])	1
9	015-0595-00	Terminal (Refer to Kit [**])	1
10	041-0006-02	Locknut (Refer to Kit [**])	1
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15		Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector (Refer to Kit [**])	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	053-0394-01	Grommet	1
22	014-0202-00	Male Branch Tee	1
23	014-0207-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-00	Pressure Relief Valve (35 P.S.I.) (include Elbow, Item 35)	1
25	053-0613-01	Tube - Pressure Relief	1
26	015-0013-05	High Temp Cable Tie (Refer to Kit [*])	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-01	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing (Refer to Kit [**])	1
31	030-0858-00	Level Sensor Assembly (Refer to Kit [**])	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
34	014-0258-00	Male Elbow	1
35	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	
36	002-0358-00	Lever Sensor Tube (Includes Item 8,9,10,16,30 and 31)	1

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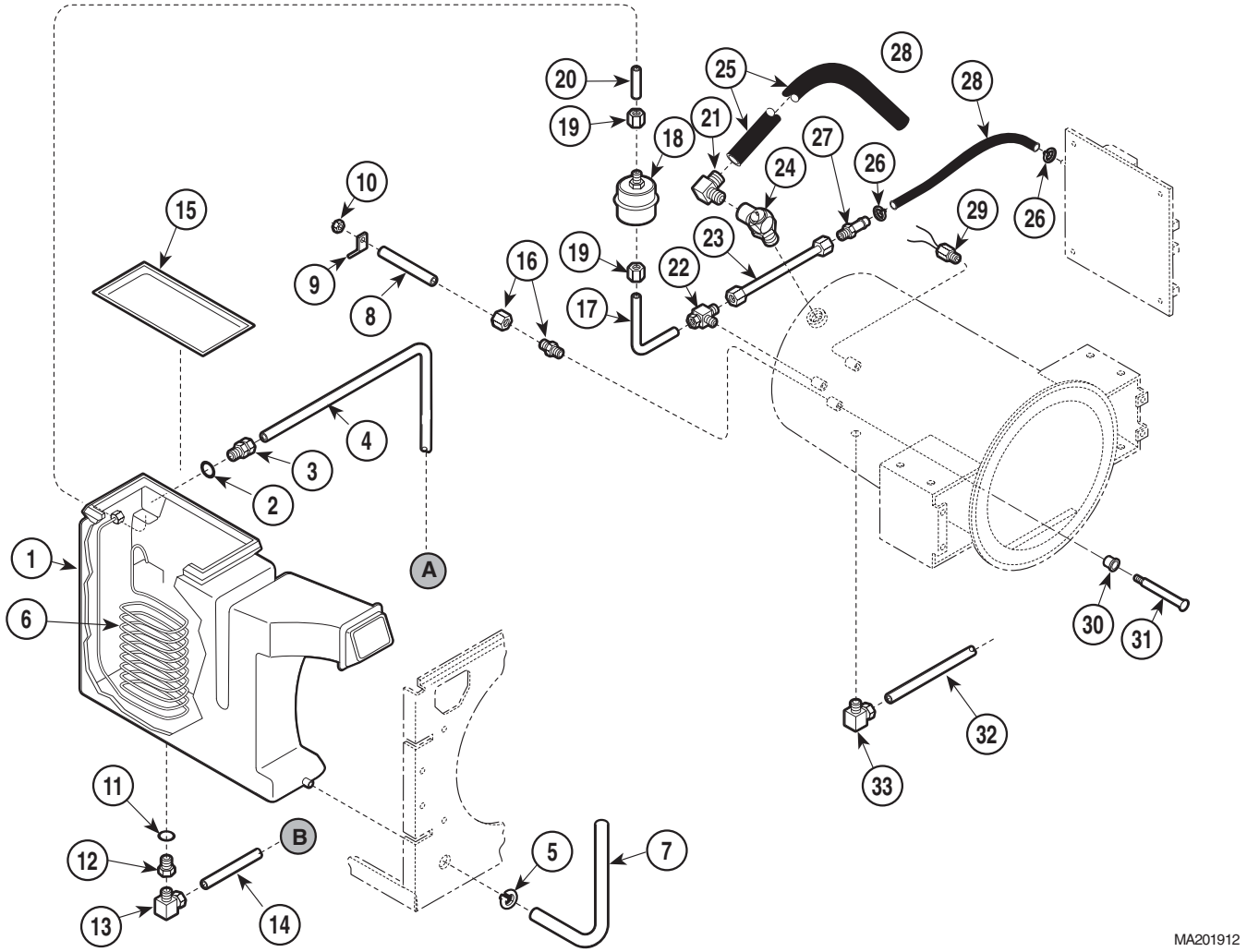
Plumbing & Sensor Components



MA201912

Used on units with Serial Numbers:

CZ4335 thru CZ5944	DB1238 thru DB1262	DX2556 thru DX2883	DY1177 thru DY1178
FD1400 thru FD1954	FF1035 thru FF1177	FG1113 thru FG1290	FK1700 thru FK2279
FL1475 thru FL1843	OM14525 thru OM17468		

Item	Part No.	Description	Qty.
1	053-0614-00	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	1
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube **(M9)**	1
	014-0277-00	Tube **(M9D)**	1
5	016-0748-00	Hose Clip	1
6	052-0173-00	Condensing Coil	1
7	053-0391-01	Hose	1
8	002-0358-00	Lever Sensor Tube (Includes Item 9,10,16,30,and 31)	1
9	015-0595-00	Terminal	1
10	041-0006-02	Locknut	1
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15		Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	014-0258-00	Male Elbow	1
22	014-0202-00	Male Branch Tee	1
23	014-0207-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-01	Pressure Relief Valve (40 P.S.I.) (Includes Elbow, Item 35)	1
25	053-0613-01	Tube - Pressure Relief	1
26	015-0013-05	Cable Tie (High Temp)	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-01	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing	1
31	030-0858-00	Level Sensor Assembly	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
(*)	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	

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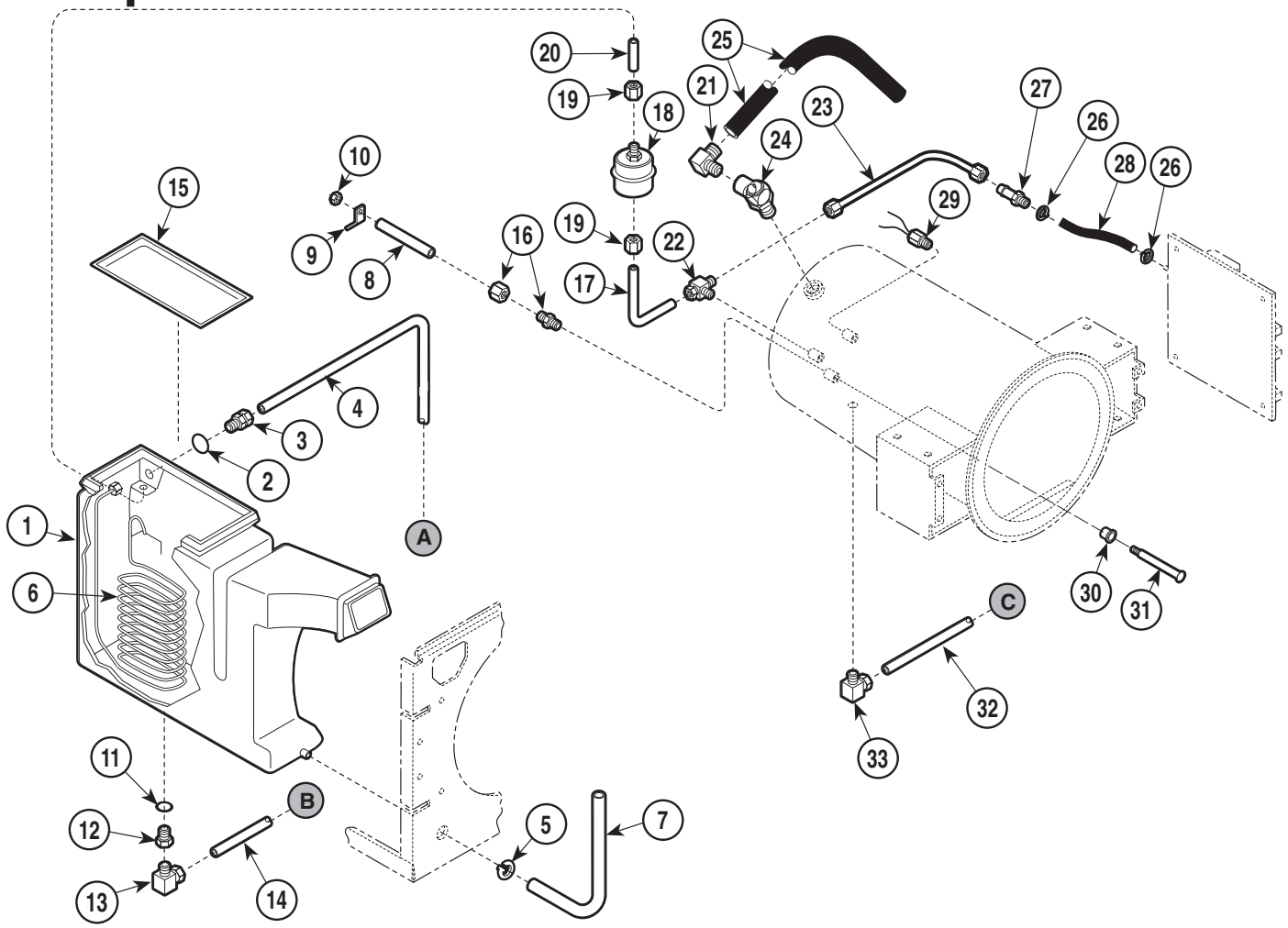
Plumbing & Sensor Components



MA510809

Used on units with Serial Numbers:

CZ5945 thru CZ6530 DB1263 thru DB1272 DX2884 thru DX2878 FD1955 thru FD1954
FF1178 thru FF1264 FG1291 thru FG1327 FK2280 thru FK2304 FL1844 thru FL1948
LA1000 thru LA1023 OM17469 thru OM18880

Item	Part No.	Description	Qty.
1	053-0614-00	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	1
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube (M9)	1
	014-0277-00	Tube (M9D)	1
5	016-0748-00	Hose Clip	1
6	052-0173-00	Condensing Coil	1
7	053-0391-01	Hose	1
8	002-0358-00	Lever Sensor Tube (Includes Item 9,10,16,30, and 31)	1
9	015-0595-00	Terminal	1
10	041-0006-02	Locknut	1
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15		Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	014-0258-00	Male Elbow	1
22	014-0202-00	Male Branch Tee	1
23	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-01	Pressure Relief Valve (40 P.S.I.) (Includes Elbow, Item 35)	1
25	053-0613-01	Tube - Pressure Relief	1
26	015-0013-05	Cable Tie (High Temp)	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-04	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing	1
31	030-0858-00	Level Sensor Assembly	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
(*)	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	

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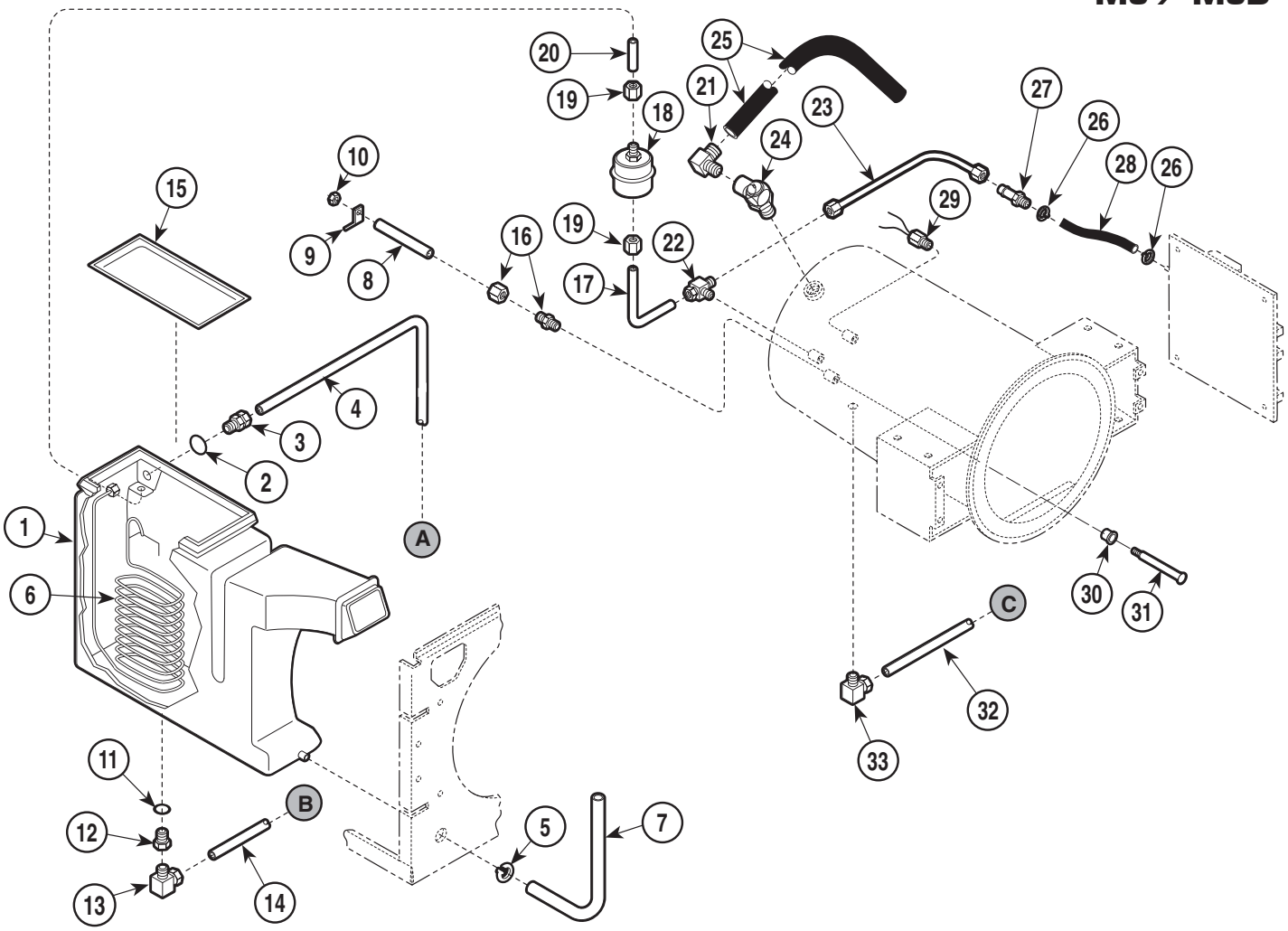
Plumbing & Sensor Components



MA510809

Used on units with Serial Numbers:

CZ6531 thru CZ7236	DX2879 thru DX2906	DY1179 thru DY1182	FD1955 thru FD2104
FK2305 thru FK2324	FL1949 thru FL1963	LA1024 thru LA1028	FF1265 thru FF1290
FG1328 thru FG1386	OM18881 thru OM20225		

Item	Part No.	Description	Qty.
1	053-0966-00	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	1
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0205-00	Tube (M9)	1
	014-0277-00	Tube (M9D)	1
5	016-0748-01	Hose Clip	1
6	052-0173-00	Condensing Coil	1
7	053-0391-01	Hose	1
8	002-0358-00	Lever Sensor Tube (Includes Item 9,10,16,30, and 31)	1
9	015-0595-00	Terminal	1
10	041-0006-02	Locknut	1
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0203-00	Tube	1
15		Condensing Tank Lid (Part of Item 1)	1
16	014-0212-00	Connector	1
17	014-0206-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	014-0258-00	Male Elbow	1
22	014-0202-00	Male Branch Tee	1
23	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-01	Pressure Relief Valve (40 P.S.I.) (Includes Elbow, Item 35)	1
25	053-0613-02	Tube - Pressure Relief	1
26	015-0013-05	Cable Tie (High Temp)	4
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-04	Tube - PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly	1
30	053-0407-00	Bushing	1
31	030-0858-00	Level Sensor Assembly	1
32	014-0204-00	Tube	1
33	014-0184-01	Male 90° Elbow	1
(*)	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	

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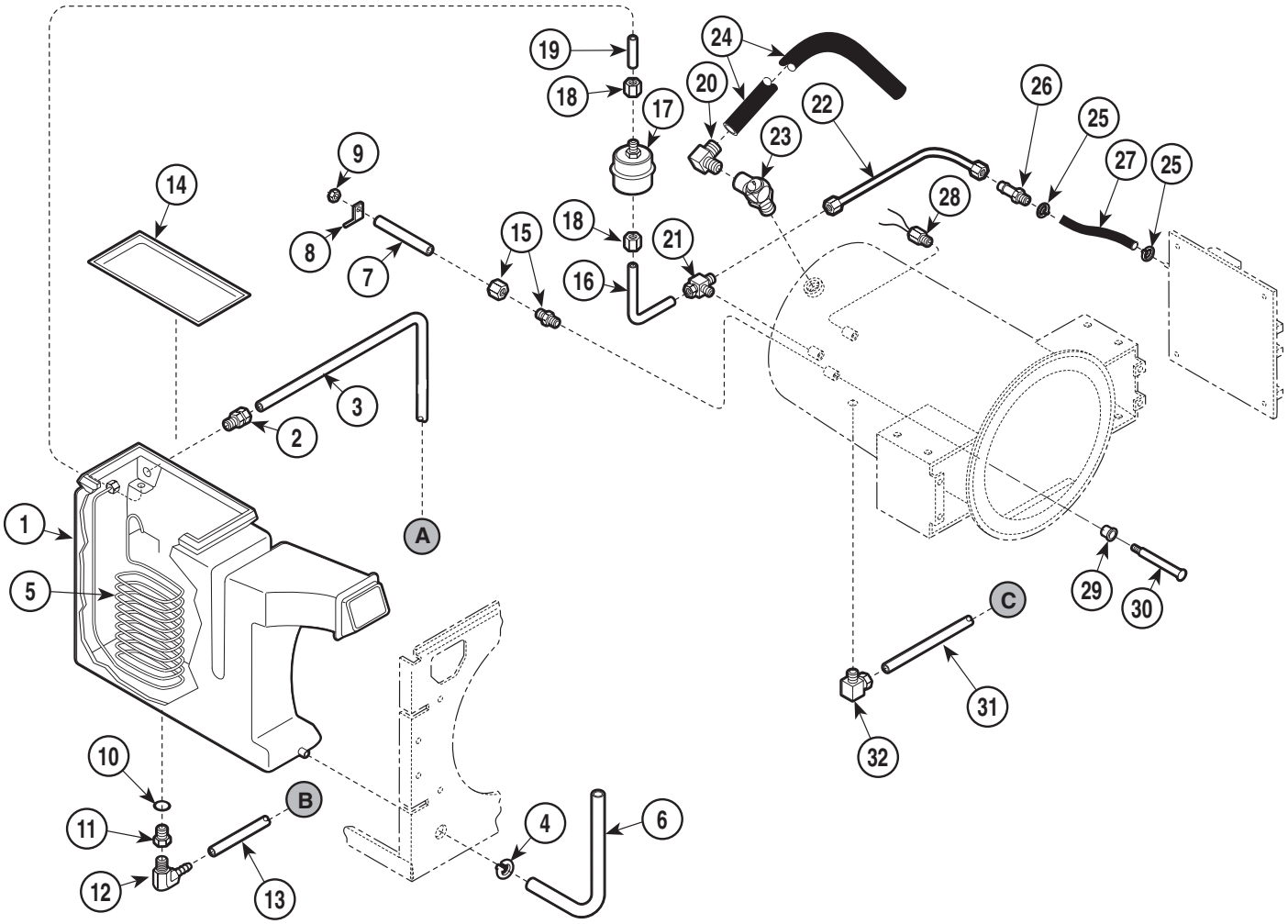
Plumbing & Sensor Components



MA510804

Used on units with Serial Numbers:

CZ7237 thru CZ10064 | DB1273 thru DB1282 | DX2907 thru DX3147 | DY1183 thru DY1190
FD2105 thru FD2264 | FF1291 thru FF1736 | FG1387 thru FG1617 | OM20226 thru OM25095

Item	Part No.	Description	Qty.
1	053-0966-00	Condensing Tank (Includes Item 15)	1
2	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
3	014-0205-00	Tube (M9)	1
	014-0277-00	Tube (M9D)	1
4	016-0748-01	Hose Clip	1
5	052-0173-00	Condensing Coil	1
6	053-0391-01	Hose	1
7	002-0358-00	Lever Sensor Tube (Includes Item 8,9,15,29, and 30)	1
8	015-0595-00	Terminal	1
9	041-0006-02	Locknut	1
10	053-0393-00	O-ring	1
11	014-0209-00	Bulkhead Couple	1
12	014-0348-00	Barb Fitting Elbow	1
13	053-1033-01	Norprene Tubing	1
14		Condensing Tank Lid (Part of Item 1)	1
15	014-0212-00	Connector	1
16	014-0206-00	Tube	1
17	002-0375-00	Bellows Assembly	1
18	014-0392-00	Compression Nut (Refer to Kit [*])	2
19	014-0208-00	Tube	1
20	014-0258-00	Male Elbow	1
21	014-0202-00	Male Branch Tee	1
22	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
23	002-0359-01	Pressure Relief Valve (40 P.S.I.) (Includes Elbow, Item 34)	1
24	053-0613-02	Tube - Pressure Relief	1
25	015-0013-05	Cable Tie (High Temp)	2
26	014-0217-00	Compression Connector (Refer to Kit [*])	1
27	053-0404-04	Tube - PCB Connector (Refer to Kit [*])	1
28	002-0357-00	Temperature Probe Assembly	1
29	053-0407-00	Bushing	1
30	030-0858-00	Level Sensor Assembly	1
31	014-0204-00	Tube	1
32	014-0184-01	Male 90° Elbow	1
(*)	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 18, 22, 25, 26, & 27)	

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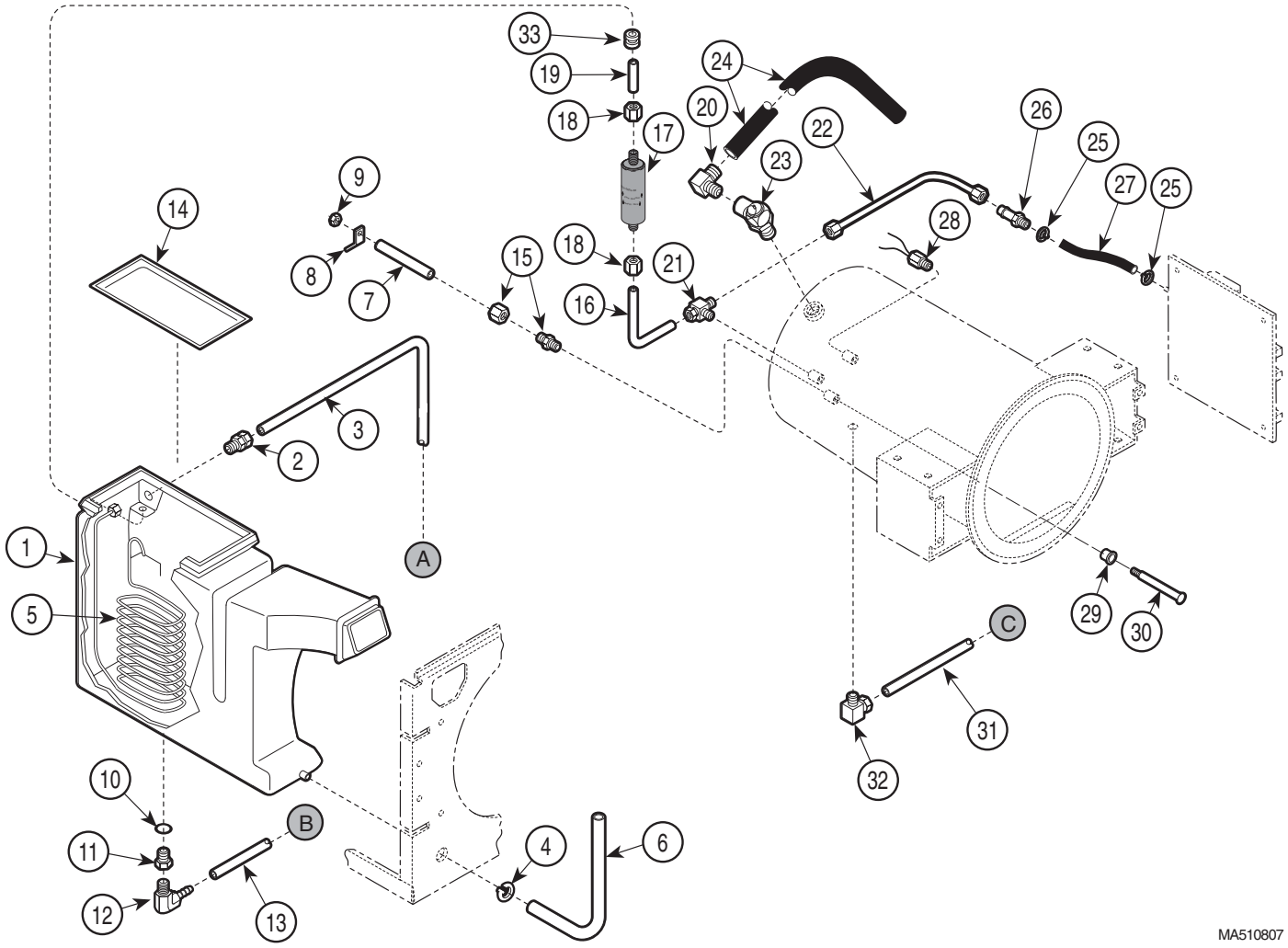
Plumbing & Sensor Components



MA510807

Used on units with Serial Numbers:
CZ10065, DA1005, DB1283, DX3148, DY1191, FD2265, FF1737, FG1618, FK2325, FL1964, LA1029, OM25096 - thru Present

Item	Part No.	Description	Qty.
1	053-0966-00	Condensing Tank (Includes Item 15)	1
2	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
3	014-0205-00	Tube (M9)	1
	014-0277-00	Tube (M9D)	1
4	016-0748-01	Hose Clip	1
5	052-0173-00	Condensing Coil	1
6	053-0391-01	Hose	1
7	002-0358-00	Lever Sensor Tube (Includes Item 8,9,15,29, and 30)	1
8	015-0595-00	Terminal	1
9	041-0006-02	Locknut	1
10	053-0393-00	O-ring	1
11	014-0209-00	Bulkhead Couple	1
12	014-0348-00	Barb Fitting Elbow	1
13	053-1033-01	Norprene Tubing	1
14	053-0966-01	Condensing Tank Lid (Part of Item 1)	1
15	014-0212-00	Connector	1
16	014-0431-00	Tube	1
17	002-0654-00	Steam Trap Assembly (Includes Items 16, 18, 19, and 33)	1
18	014-0392-00	Compression Nut (Refer to Kit [*])	2
19	014-0208-00	Tube	1
20	014-0258-00	Male Elbow	1
21	014-0202-00	Male Branch Tee	1
22	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
23	002-0359-01	Pressure Relief Valve (40 P.S.I.) (Includes Elbow, Item 34)	1
24	053-0613-02	Tube - Pressure Relief	1
25	015-0013-05	Cable Tie (High Temp)	2
26	014-0217-00	Compression Connector (Refer to Kit [*])	1
27	053-0404-04	Tube - PCB Connector (Refer to Kit [*])	1
28	002-0357-00	Temperature Probe Assembly	1
29	053-0407-00	Bushing	1
30	030-0858-00	Level Sensor Assembly	1
31	014-0204-00	Tube	1
32	014-0184-01	Male 90° Elbow	1
33	053-0394-02	Grommet	1
(*)	002-0593-01	(*)Pressure Sensor Tube Kit (Includes #'s 18, 22, 25, 26, & 27)	

Always Specify Model & Serial Number

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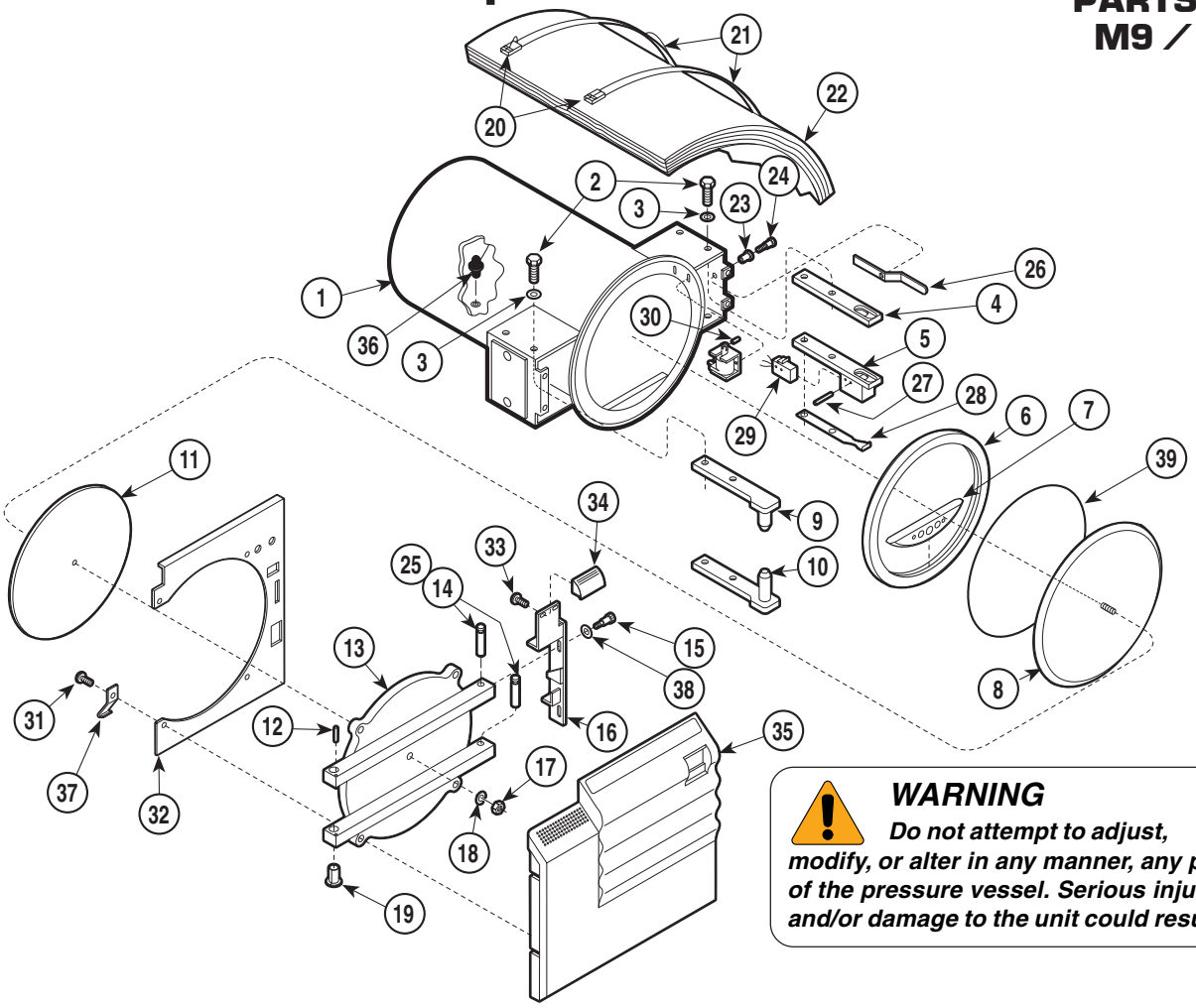
Pressure Vessel Components



WARNING

Do not attempt to adjust, modify, or alter in any manner, any part of the pressure vessel. Serious injury and/or damage to the unit could result.

MA202010

Used on units with Serial Numbers:

CZ1000 thru CZ8199	**DB1000 thru DB1277**	**DX1000 thru DX3006**	**DY1000 thru DY1185**
FD1000 thru FD2131	**FF1000 thru FF1634**	**FG1000 thru FG1471**	**FK1000 thru FK3224**
FL1000 thru FL1963	**LA1000 thru LA1028**	**OM1000 thru OM21774**	

Item	Part No.	Description	Qty.
1		Chamber	1
2		Screw	8
3		Washer	8
4		Right Bracket	1
5		Switch Weldment	1
6	053-0366-00	Door Gasket (Incl. in 002-0361-00 Kit)	1
7	053-0508-00	Dam Gasket (Incl. in 002-0361-00 Kit)	1
8	030-1016-00	Housing	1
9		Top Bracket	1
10		Bottom Bracket	1
11	016-0395-01	Door Insulation Pad	1
12	042-0104-00	Roll Pin	1
13		Door	1
14		Door Bolt	2
15	042-0106-00	Shoulder Screw	2
16	050-3525-00	Latch	1
17	041-0000-00	Nut	1
18	045-0000-00	Lockwasher	1
19		Flange Bearing	2
20	H99387	Aluminum Seal	2
21	H99388-36	Insulation Strap	2
22	*(N.L.A.)*	Insulation Wrapper	1
23	016-0131-18	Flanged Bearing (Not Used on M9D)	1
24	042-0106-01	Shoulder Screw (Not Used on M9D) (Apply Lubricant #064-0002-00])	1
25	064-0014-00	Grease	AR
26	050-5192-00	Latch Lever (Not Used on M9D)	1
27	042-0001-23	Roll Pin	2
28	050-2362-00	Spring Arm	1
29	002-0362-00	Door Switch (Includes Item 27)	1
30	042-0001-09	Roll Pin (Not Used on M9D)	1
31	040-0008-50	Screw	4
32	050-2011-00	Inside Door Cover	1
33	040-0010-75	Screw	2
34	053-0912-00	Door Handle (M9)	1
	(N.L.A.)	Door Handle (M9D)	1
35	002-0364-00	Ritter M9 Door Panel (w/decals)	1
	002-0364-01	Midmark M9 Door Panel (w/decals)	1
	002-0364-02	EMS M9 Door Panel (w/decals)	1
	002-0364-03	M9D Door Panel	1
36	002-0360-00	Filter	1
37	050-2347-00	Door Spring	1
38	045-0000-04	Washer	2
39	057-0790-01	Gasket Ring (Incl. in 002-0361-00 Kit)	1

Always Specify Model & Serial Number

N.L.A. Denotes "No Longer Available

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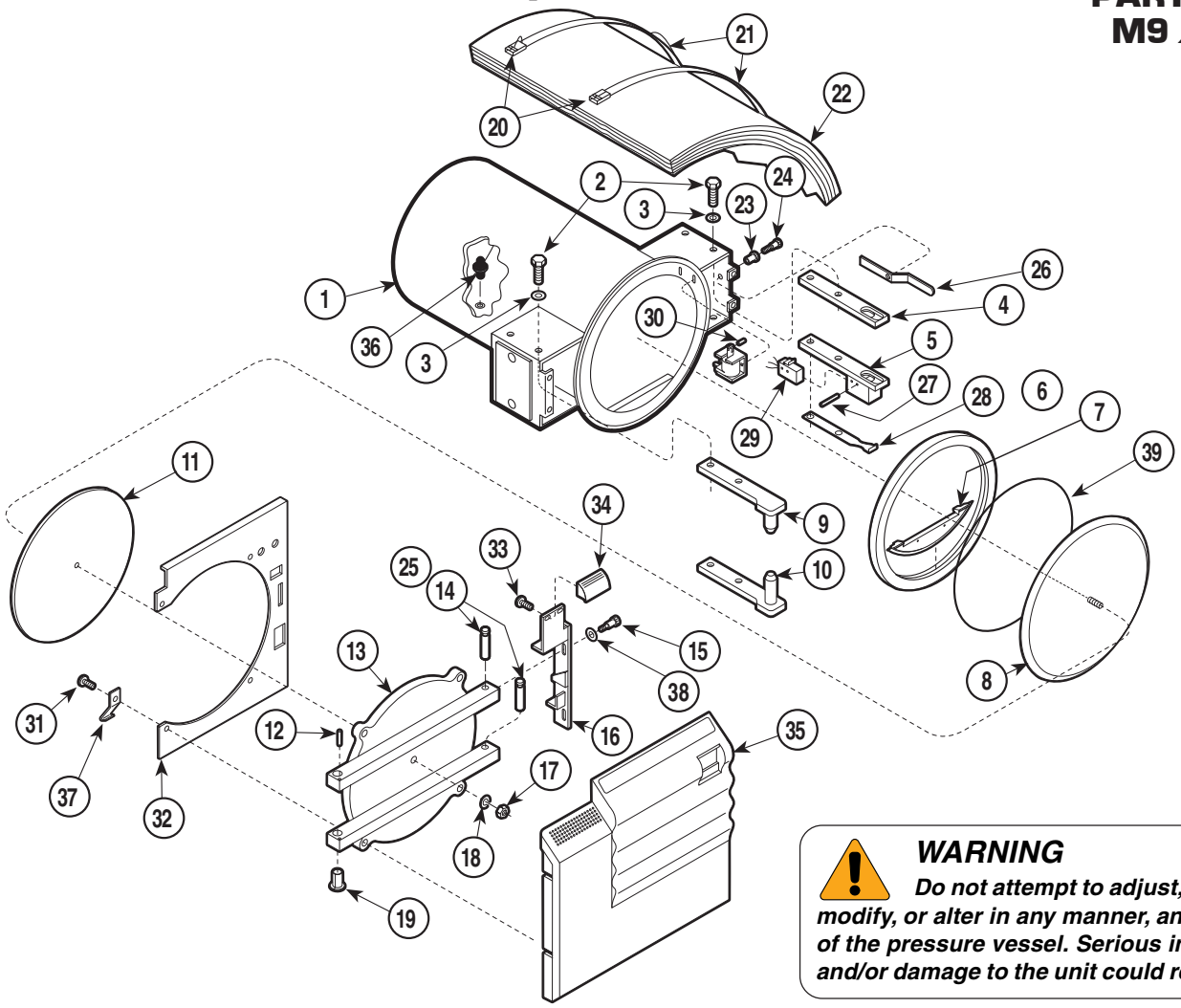
Pressure Vessel Components



WARNING

Do not attempt to adjust, modify, or alter in any manner, any part of the pressure vessel. Serious injury and/or damage to the unit could result.

MA202013

Used on units with Serial Numbers:
CZ8200, DB1278, DX3007, DY1186, FD2132, FF1635, FG1472, FK3225, FL1964, LA1029, and OM21775 - thru Present

Item	Part No.	Description	Qty.
1		Chamber	1
2		Screw	8
3		Washer	8
4		Right Bracket	1
5		Switch Weldment	1
6	053-0366-00	Door Gasket (Incl. in 002-0361-01 Kit)	1
7	053-0903-00	Dam Gasket (Incl. in 002-0361-01 Kit)	1
8	030-1016-00	Housing	1
9		Top Bracket	1
10		Bottom Bracket	1
11	016-0395-01	Door Insulation Pad	1
12	042-0104-00	Roll Pin	1
13		Door	1
14		Door Bolt	2
15	042-0106-00	Shoulder Screw	2
16	050-3525-00	Latch	1
17	041-0000-00	Nut	1
18	045-0000-00	Lockwasher	1
19		Flange Bearing	2
20	H99387	Aluminum Seal	2
21	H99388-36	Insulation Strap	2
22	*(N.L.A.)*	Insulation Wrapper	1
23	016-0131-18	Flanged Bearing (Not Used on M9D)	1
24	042-0106-01	Shoulder Screw (Not Used on M9D) (Apply Lubricant #064-0002-00])	1
25	064-0014-00	Grease	AR
26	050-5192-00	Latch Lever (Not Used on M9D)	1
27	042-0001-23	Roll Pin	2
28	050-5245-01	Spring Arm	1
29	002-0362-00	Door Switch (Includes Item 27)	1
30	042-0001-09	Roll Pin (Not Used on M9D)	1
31	040-0008-50	Screw	4
32	050-2011-00	Inside Door Cover	1
33	040-0010-75	Screw	2
34	053-0912-00	Door Handle (M9)	1
	(N.L.A.)	Door Handle (M9D)	1
35	002-0364-00	Ritter M9 Door Panel (w/decals)	1
	002-0364-01	Midmark M9 Door Panel (w/decals)	1
	002-0364-02	EMS M9 Door Panel (w/decals)	1
	002-0364-03	M9D Door Panel	1
36	002-0360-00	Filter	1
37	050-2347-00	Door Spring	1
38	045-0000-04	Washer	2
39	057-0790-01	Gasket Ring (Incl. in 002-0361-01 Kit)	1

Always Specify Model & Serial Number
N.L.A. Denotes "No Longer Available

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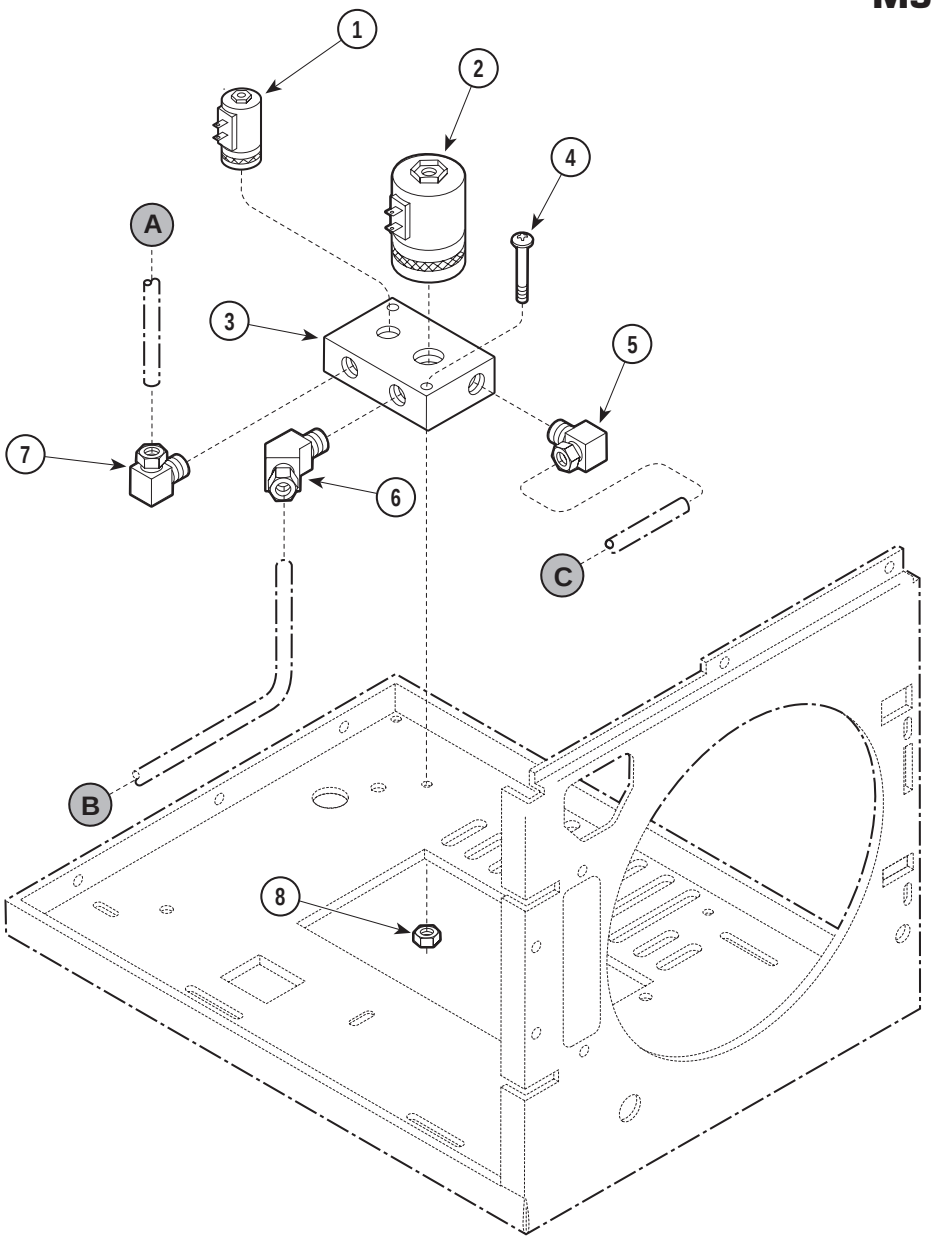
M9 Manifold Components



MA202102

Used on units with Serial Number CZ1000 thru CZ1109

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	014-0199-00	Solenoid Valve [Vent]	1	5	014-0184-01	Male 90° Elbow	1
2	014-0200-00	Solenoid Valve [Fill]	1	6	014-0201-00	Male 45° Elbow	1
3	014-0198-00	Manifold	1	7	014-0184-00	Male 90° Elbow	1
4	040-0010-53	Screw	2	8	014-0010-04	Nut	2

Always Specify Model & Serial Number

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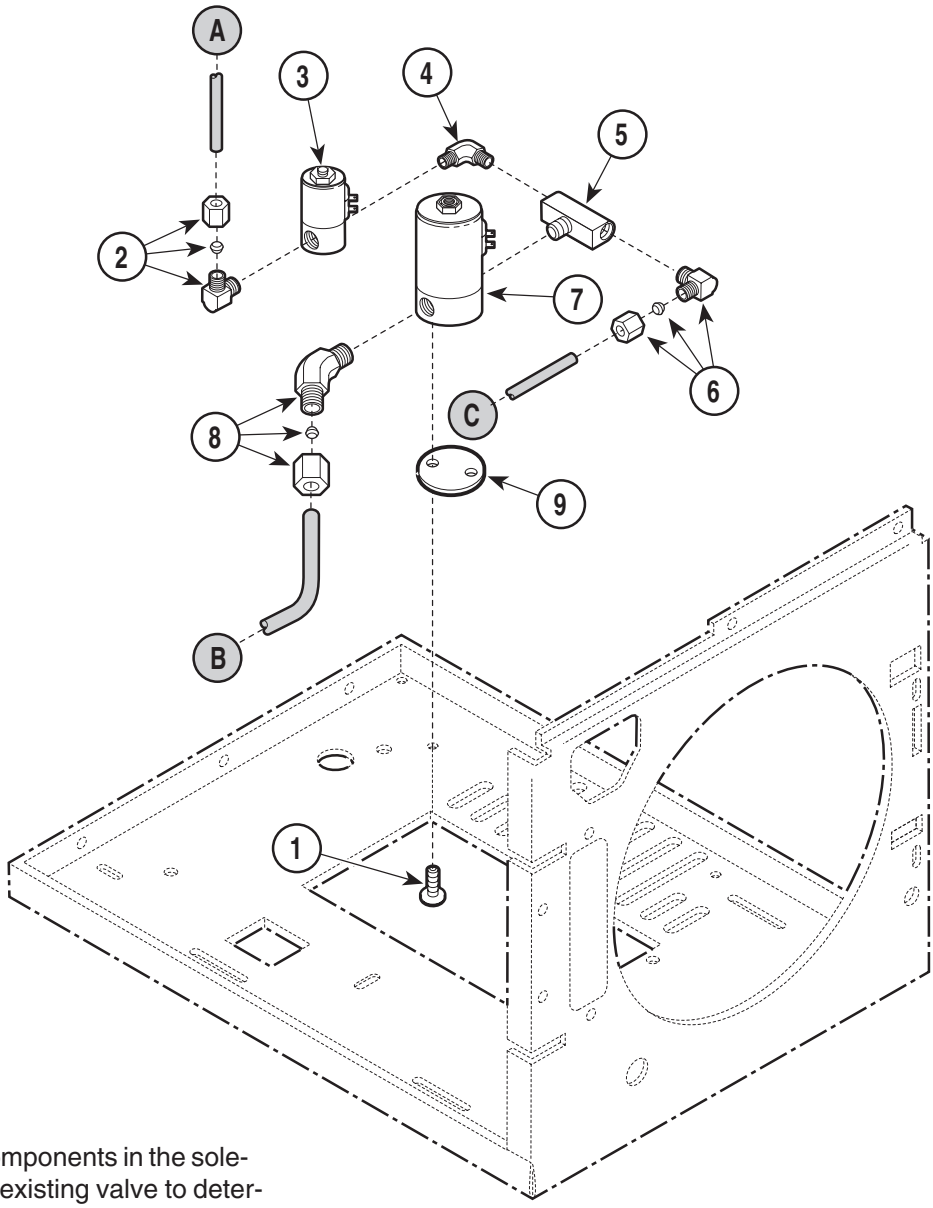
M9 Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA202205

Used on units with Serial Numbers:

CZ1110 thru CZ7236	**DA1000 thru DA1006**	**DB1000 thru DB1272**	**DX1000 thru DX2906**
DY1000 thru DY1182	**FD1000 thru FD2104**	**FK1000 thru FK2324**	**FL1000 thru FL1963**
	LA1000 thru LA1028	**OM1000 thru OM20225**	

Item	Part No.	Description	Qty.
	029-1271-00	Manifold Assembly (120V/60Hz) (includes items 2 thru 8)	
	029-1271-01	Manifold Assembly (230V/50Hz) (includes items 2 thru 8)	
1	040-0010-74	Screw	2
2	• 014-0184-00	Male 90° Elbow	1
3	• 002-0366-00	Solenoid Valve {120V/60Hz} [Vent]	1
	• 002-0366-01	Solenoid Valve {230V/50Hz} [Vent]	1
	• 002-0366-02	Solenoid Valve {100V/50Hz} [Vent]	1
	•• 014-0235-03	• Replacement Coil (120V/60)	1
	•• 014-0235-04	• Replacement Plunger	1
4	• 014-0218-01	Male Elbow	1
5	• 014-0234-00	Male Branch Tee	1
6	• 014-0184-01	Male 90° Elbow	1
7	• 002-0365-00	Solenoid Valve (120V/60Hz) [Fill]	1
	• 002-0365-01	Solenoid Valve (230V/50Hz) [Fill]	1
	• 002-0365-02	Solenoid Valve (100V/50Hz) [Fill]	1
	•• 014-0236-08	• Replacement Coil (120V/60Hz)	1
	•• 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
	•• 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	•• 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
	•• 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
8	• 014-0201-00	Male 45° Elbow	1
9	050-2657-00	Spacer	1

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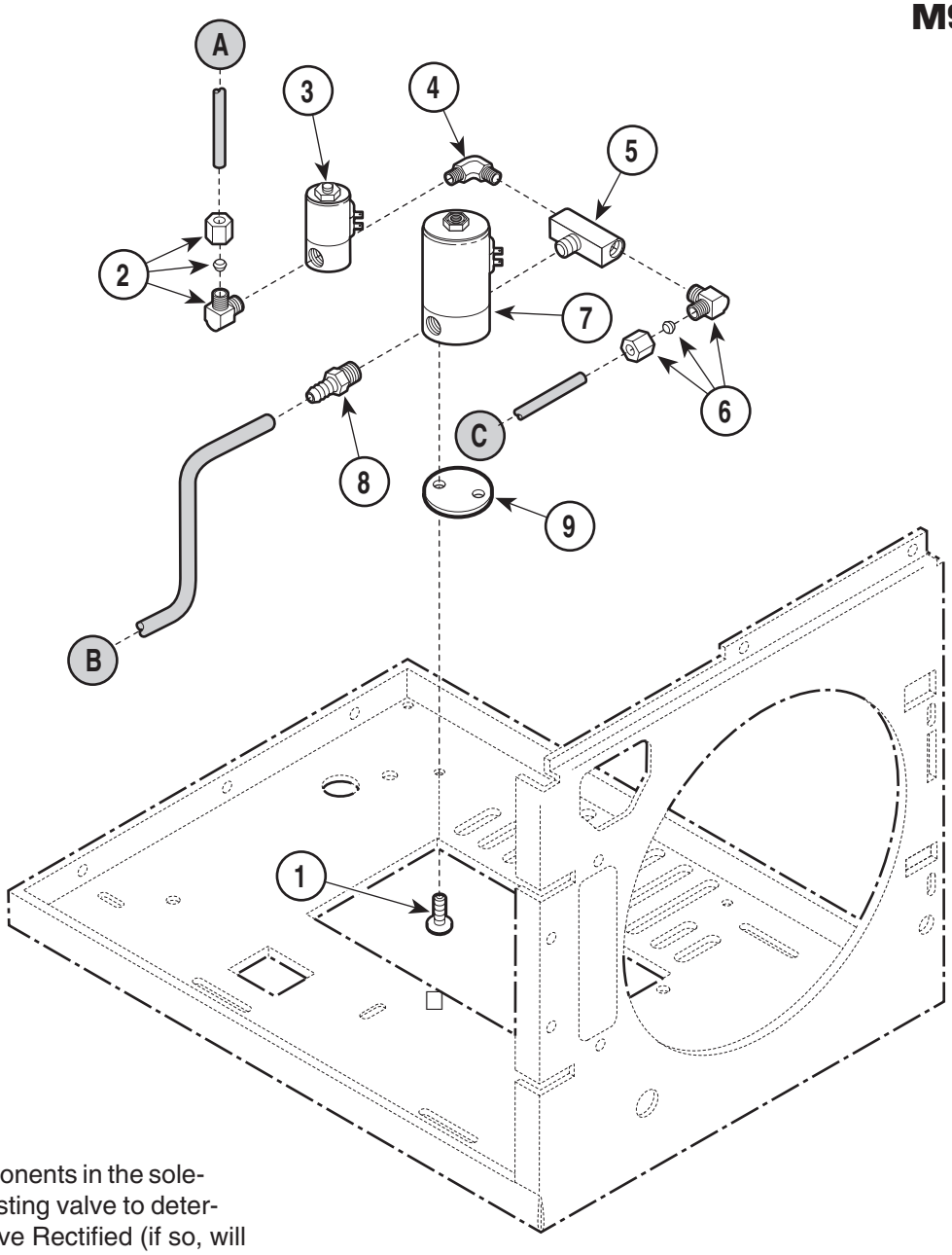
M9 Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA510701

Used on units with Serial Numbers:
CZ7237, DA1007, DB1273, DX2907, DY1183, FD2105, FK2325, FL1964, LA1029, and OM20226 - thru Present

Item	Part No.	Description	Qty.
	029-1271-00	Manifold Assembly (120V/60Hz) (includes items 2 thru 8)	
	029-1271-01	Manifold Assembly (230V/50Hz) (includes items 2 thru 8)	
1	040-0010-74	Screw	2
2	• 014-0184-00	Male 90° Elbow	1
3	• 002-0366-00	Solenoid Valve {120V/60Hz} [Vent]	1
	• 002-0366-01	Solenoid Valve {230V/50Hz} [Vent]	1
	• 002-0366-02	Solenoid Valve {100V/50Hz} [Vent]	1
	• • 014-0235-03	• Replacement Coil (120V/60)	1
	• • 014-0235-04	• Replacement Plunger	1
4	• 014-0218-01	Male Elbow	1
5	• 014-0234-00	Male Branch Tee	1
6	• 014-0184-01	Male 90° Elbow	1
7	• 002-0365-00	Solenoid Valve (120V/60Hz) [Fill]	1
	• 002-0365-01	Solenoid Valve (230V/50Hz) [Fill]	1
	• 002-0365-02	Solenoid Valve (100V/50Hz) [Fill]	1
	• • 014-0236-08	• Replacement Coil (120V/60Hz)	1
	• • 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
	• • 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• • 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
	• • 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
8	• 014-0347-00	Barb Fitting	1
9	050-2657-00	Spacer (Used on units with flat base)	1

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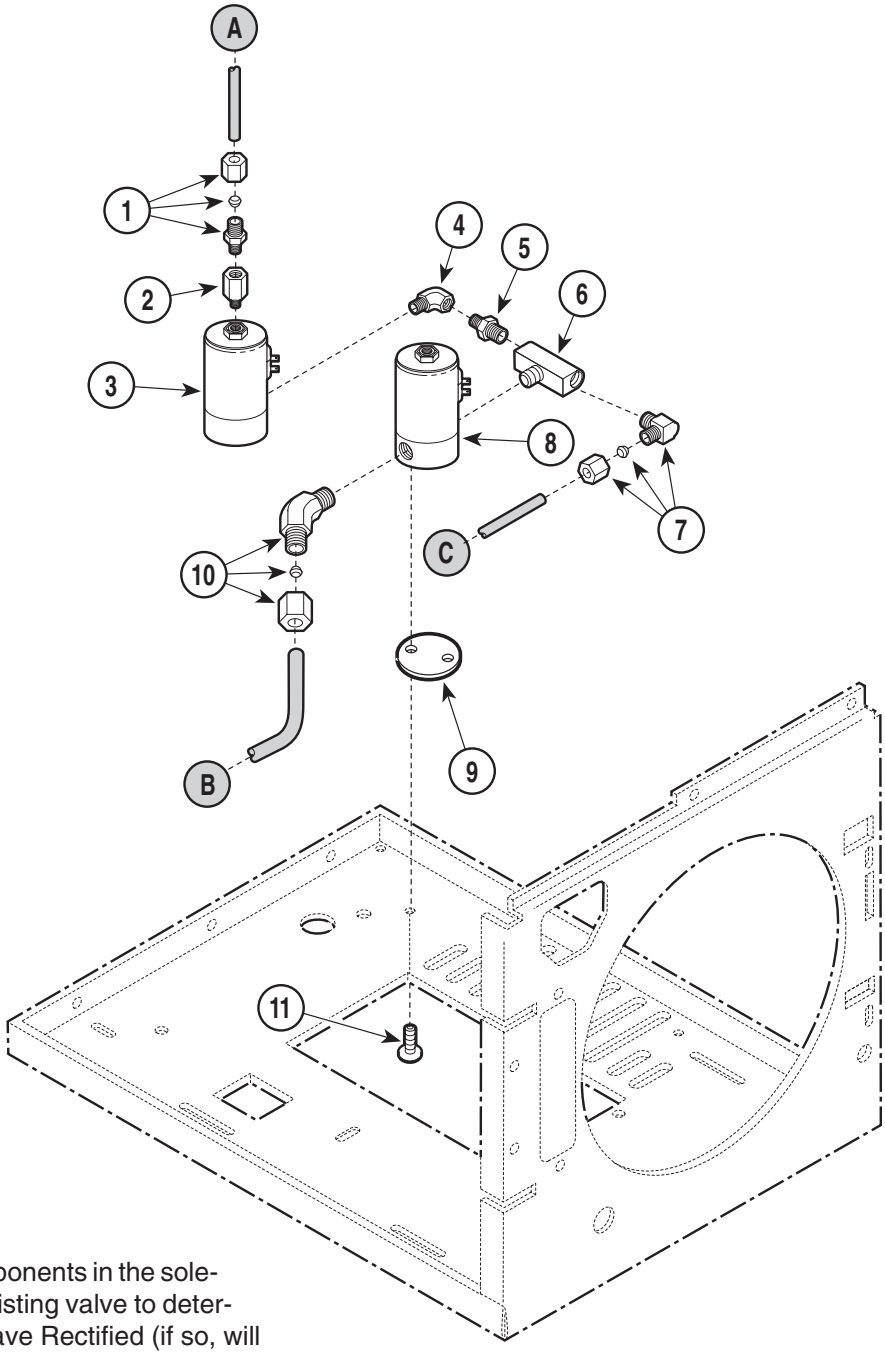
M9D Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA442700

Used on Units with Serial Numbers:
FF1000 thru FF1290 FG1000 thru FG1386

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	014-0183-01	Male Connector	1	8	002-0365-00	Solenoid Valve{120V/60Hz}) [Fill]	1
2		Reducer Fitting	1		• 014-0236-08	• Replacement Coil (120V/60Hz)	1
3	002-0519-00	Solenoid Valve {120V/60Hz} [Vent] (Includes Item 2)	1		• 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
					• 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• 014-0275-02	• Replacement Coil & Plunger	1		• 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
4	014-0194-00	Street Elbow	1		• 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
5	014-0276-00	Reducer Nipple	1	9	050-2657-00	Spacer	1
6	014-0234-00	Male Branch Tee	1	10	014-0201-00	Male 45° Elbow	1
7	014-0184-01	Male 90° Elbow	1	11	040-0010-74	Screw	2

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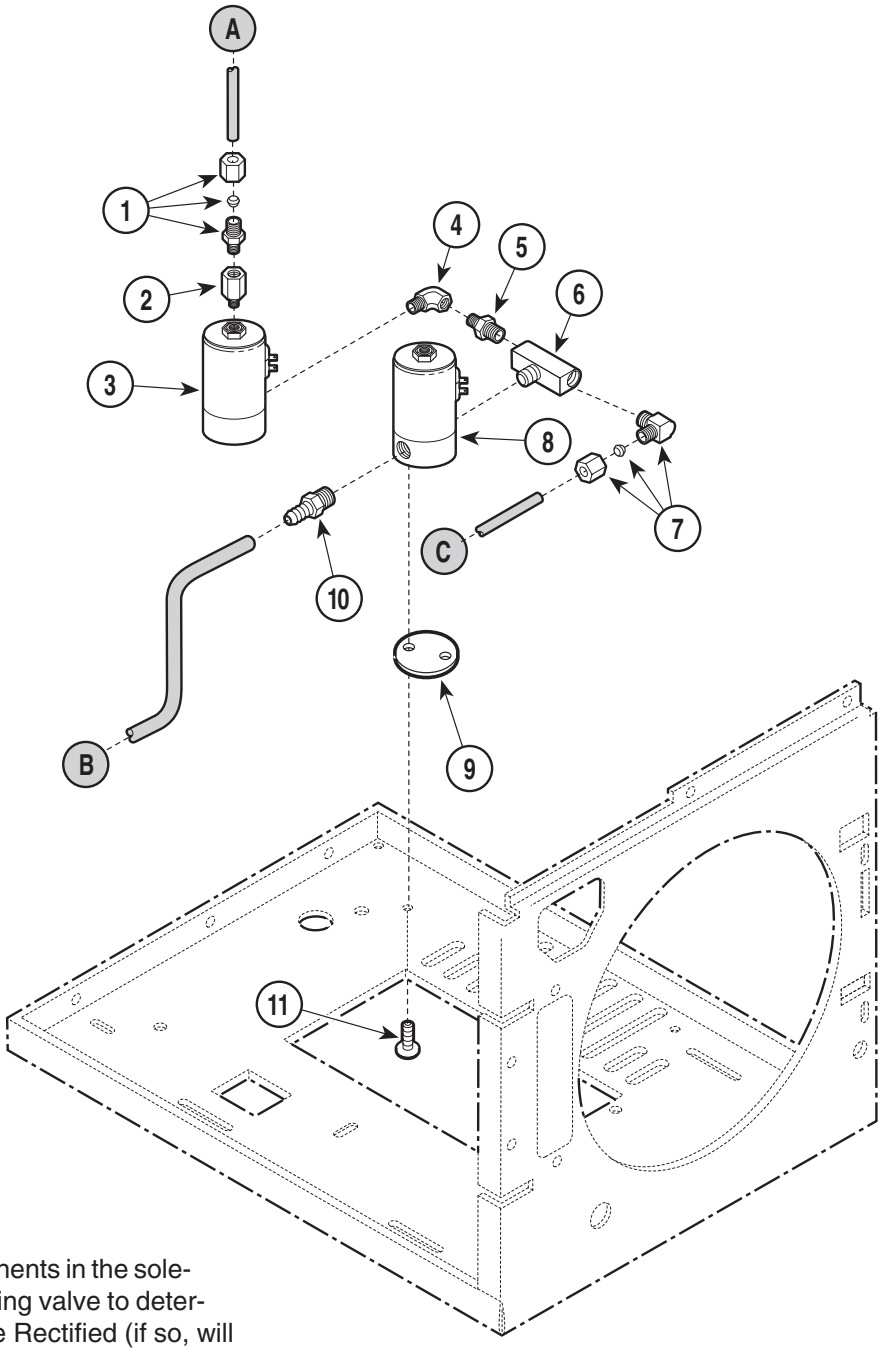
M9D Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA511100

Used on Units with Serial Numbers:
FF1291, FG1387 - thru Present

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	014-0183-01	Male Connector	1	8	002-0365-00	Solenoid Valve{120V/60Hz}) [Fill]	1
2		Reducer Fitting	1		• 014-0236-08	• Replacement Coil (120V/60Hz)	1
3	002-0519-00	Solenoid Valve {120V/60Hz} [Vent] (Includes Item 2)	1		• 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
					• 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• 014-0275-02	• Replacement Coil & Plunger	1		• 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
4	014-0194-00	Street Elbow	1		• 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
5	014-0276-00	Reducer Nipple	1	9	050-2657-00	Spacer (Used on Flat Surfaced Base)	1
6	014-0234-00	Male Branch Tee	1	10	014-0347-00	Barb Fitting	1
7	014-0184-01	Male 90° Elbow	1	11	040-0010-74	Screw	2

Always Specify Model & Serial Number

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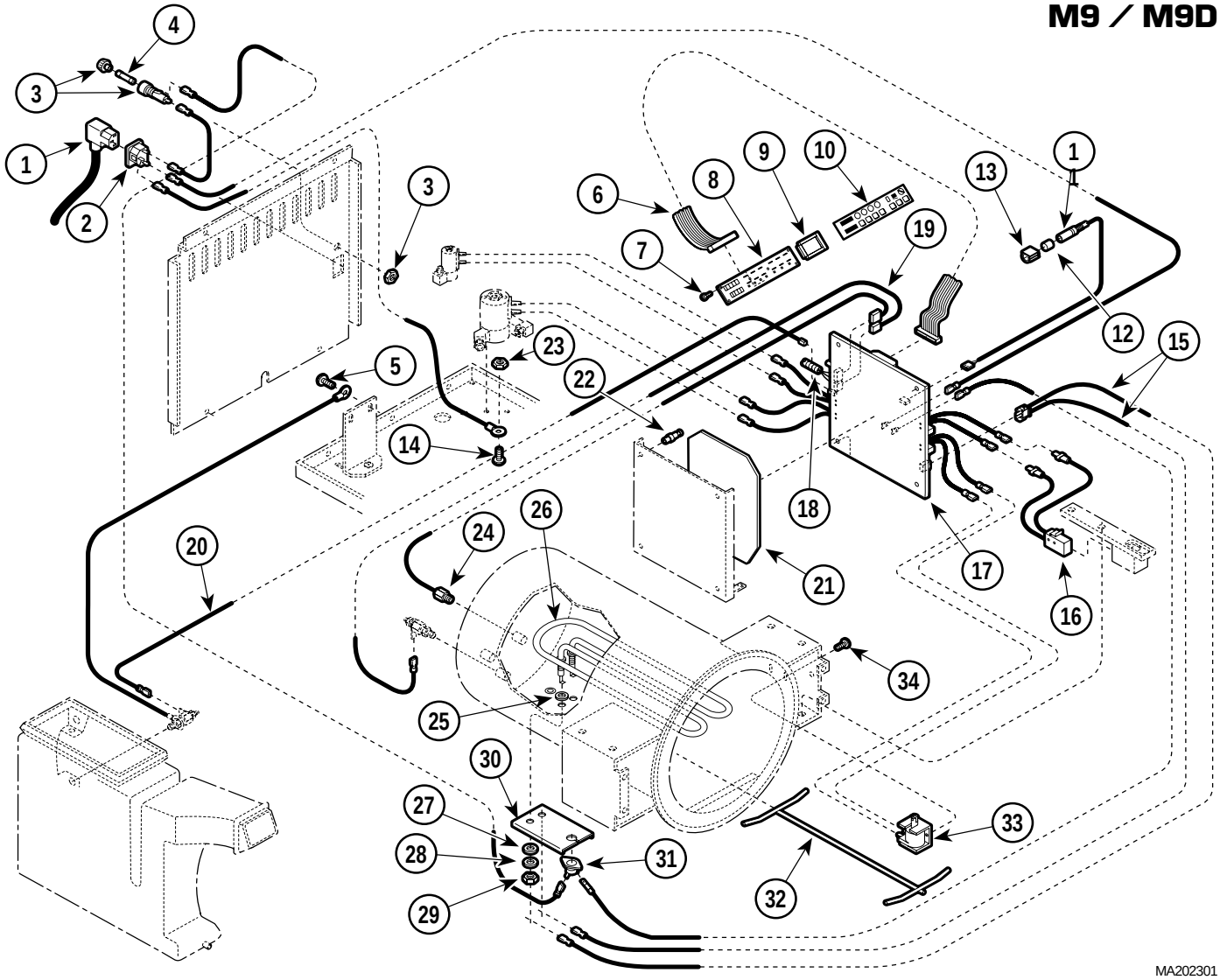
Electrical Components



MA202301

Used on units with Serial Numbers:

CZ1000 thru CZ1684 DA1000 thru DA1001 DB1000 thru DB1010
DX1000 thru DX1170 DY1000 thru DY1007 OM1000 thru OM5130

Item	Part No.	Description	Qty.
1		Cordset (Refer to Wiring Diagram)	1
2	015-0639-00	AC Connector Receptacle	1
3	A128003	Fuse Holder w/Nut (Early Units Only)	1
4		Fuse	1
5	040-0010-75	Screw	1
6	015-0646-00	Ribbon Connector	1
7	040-0006-04	Screw	6
8	002-0369-00	Display PC Board (Domestic)	1
	002-0369-01	Display PC Board (Export)	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	Display Overlay (Domestic)	1
	061-0272-00	Display Overlay (Export)	1
11	015-0978-00	Harness - PCB/Printer	1
12	053-0440-00	Cap Plug	1
13	053-0389-00	Printer Harness Clip	1
14	040-0010-46	Screw	1
15	015-0657-00	PCB/Heater Harness	1
16	002-0362-00	Switch Assembly	1
17		Control PC Board (See Breakdown Elsewhere)	Ref
18	015-0257-02	Flex Guard Tubing	1
19	015-0654-00	Chamber Level Sensor Harness	1
20	015-0655-00	Reservoir Sensor Harness	1
21	053-0455-00	Insulator	1
22	053-0295-01	Standoff	3
23	041-0010-04	Locknut	1
24	002-0357-00	Temperature Probe Assembly	1
25	H98137	Gasket	2
26	002-0367-00	Heat Element-{120V}(Includes Item 25)	1
	002-0367-01	Heat Element-{230V}(Includes Item 25)	1
	002-0367-02	Heat Element-{100V}(Includes Item 25)	1
27	H97971	Washer	2
28	045-0001-56	Lockwasher	2
29	H97949	Nut	2
30	H225617	Bracket	1
31	002-0370-00	Thermostat	1
32	030-0769-00	Spacer Assembly	1
33	002-0363-00	Solenoid-{120V}	1
	002-0363-01	Solenoid-{240V}	1
	002-0363-02	Solenoid-{100V}	1
34	040-0010-74	Screw	2

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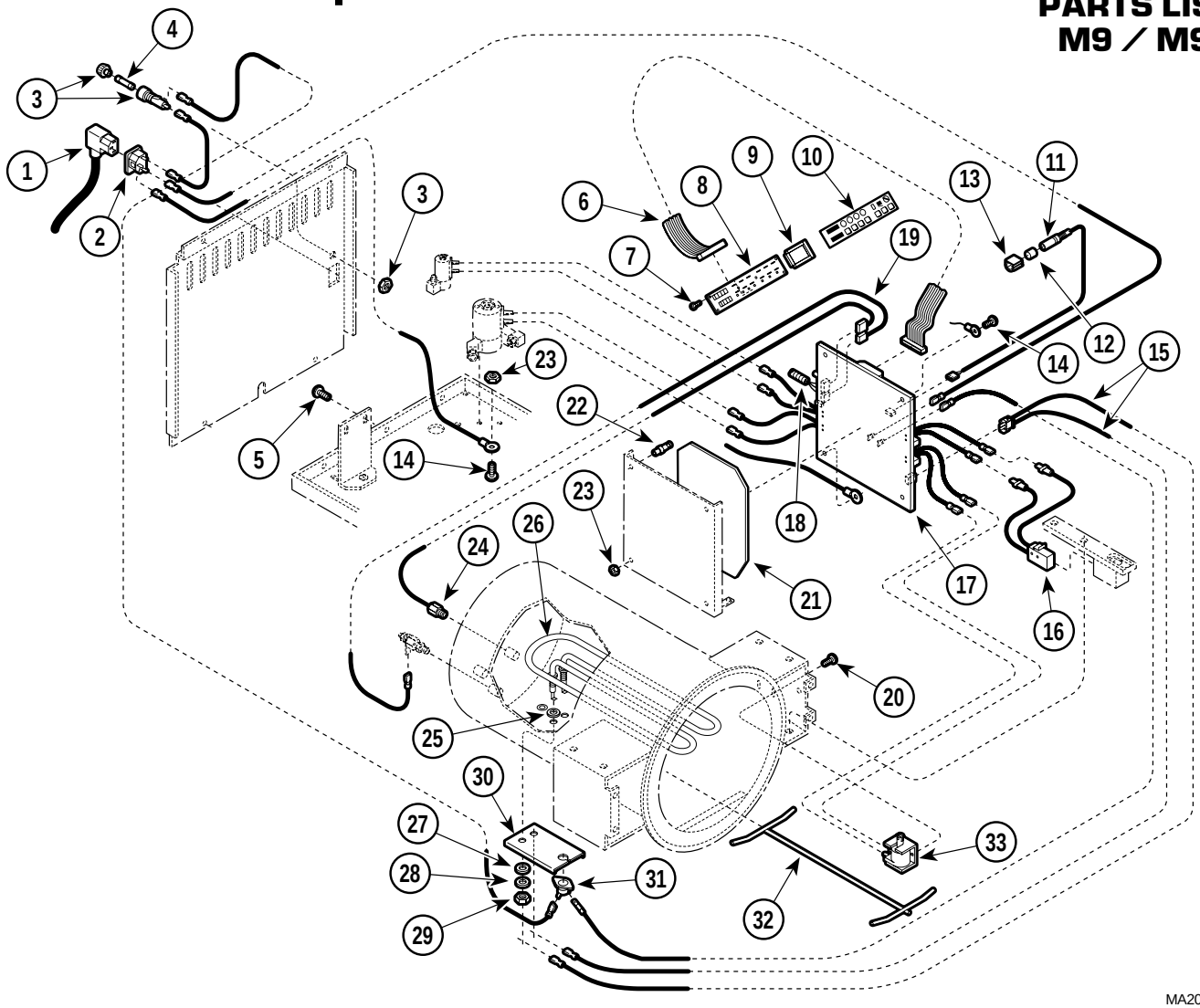
Electrical Components



MA2023-02

Used on units with Serial Numbers:

CZ1685 thru CZ2456 DA1002 thru DA1004 DB1011 thru DB1149
DX1171 thru DX1969 DY1008 thru DY1138 OM5131 thru OM9448

Item	Part No.	Description	Qty.
1		Cordset (Refer to Wiring Diagram)	1
2	015-0639-00	AC Connector Receptacle	1
3	A128003	Fuse Holder w/Nut (Early Units Only)	1
4		Fuse	1
5	040-0010-75	Screw	1
6	015-0646-00	Ribbon Connector	1
7	040-0006-04	Screw	6
8	002-0369-00	Display PC Board (Domestic)	1
	002-0369-01	Display PC Board (Export)	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	Display Overlay (Domestic)	1
	061-0272-00	Display Overlay (Export)	1
11	015-0978-00	Harness - PCB/Printer	1
12	053-0440-00	Cap Plug	1
13	053-0389-00	Printer Harness Clip	1
14	040-0010-46	Screw	1
15	015-0657-00	PCB/Heater Harness	1
16	002-0362-00	Switch Assembly	1
17		Control PC Board (See Breakdown Elsewhere)	Ref
18	015-0257-02	Flex Guard Tubing	1
19	015-0654-00	Chamber Level Sensor Harness	1
20	040-0010-74	Screw	2
21	053-0455-00	Insulator	1
22	053-0295-01	Standoff	3
23	041-0010-04	Locknut	1
24	002-0357-00	Temperature Probe Assembly	1
25	H98137	Gasket	2
26	002-0367-00	Heat Element-{120V}(Includes Item 25)	1
	002-0367-01	Heat Element-{230V}(Includes Item 25)	1
	002-0367-02	Heat Element-{100V}(Includes Item 25)	1
27	H97971	Washer	2
28	045-0001-56	Lockwasher	2
29	H97949	Nut	2
30	H225617	Bracket	1
31	002-0370-00	Thermostat	1
32	030-0769-00	Spacer Assembly	1
33	002-0363-00	Solenoid-{120V}	1
	002-0363-01	Solenoid-{240V}	1
	002-0363-02	Solenoid-{100V}	1

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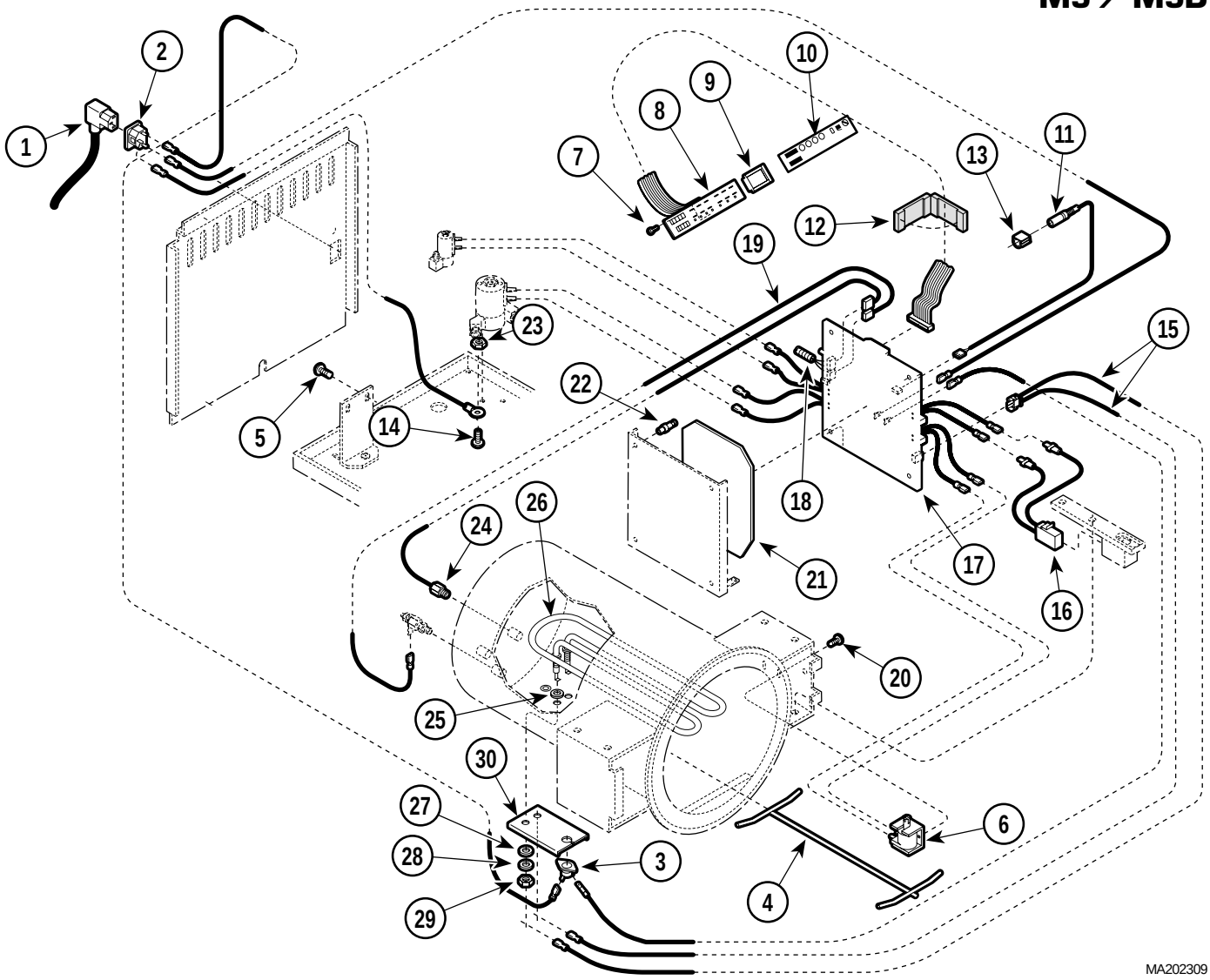
Electrical Components



MA202309

Used on units with Serial Numbers:
CZ2457 thru CZ4590 FF1000 thru FF1054 FG1000 thru FG1137 OM9449 thru OM14723

Item	Part No.	Description	Qty.
1		Cordset (Refer to Wiring Diagram)	1
2	015-0639-00	AC Connector Receptacle	1
3	002-0370-00	Thermostat	1
4	057-0425-00	Spacer Assembly	1
5	040-0010-75	Screw	1
6	002-0363-00	Solenoid-{120V} (M9 only)	1
	002-0363-01	Solenoid-{240V} (M9 only)	1
	002-0363-02	Solenoid-{100V} (M9 only)	1
7	040-0006-04	Screw	6
8	002-0369-02	Display PC Board (Domestic)	1
	002-0369-03	Display PC Board (Export)	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	M9 Display Overlay (Domestic)	1
	061-0272-00	M9 Display Overlay (Export)	1
	061-0272-02	M9 Display Overlay (French)	1
	061-0531-00	M9D Display Overlay	1
11		PCB/Printer Harness (Refer to "Printer Components" Elsewhere)	1
12	015-1096-00	Flat Cable EMI Suppression (Used Only On Certain Export Units)	1
13	053-0389-01	Printer Harness Clip	1
14	040-0010-46	Screw	1
15	015-0657-00	PCB/Heater Harness	1
16	002-0362-00	Switch Assembly	1
17		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
18	015-0257-02	Flex Guard Tubing	1
19	015-0654-00	Chamber Level Sensor Harness	1
20	040-0010-74	Screw (M9 only)	2
21	053-0455-00	Insulator	1
22	053-0295-01	Standoff	3
23	041-0010-04	Locknut	1
24	002-0357-00	Temperature Probe Assembly	1
25	H98137	Gasket	2
26	002-0367-00	Heat Element-{120V}(Includes Item 25)	1
	002-0367-01	Heat Element-{230V}(Includes Item 25)	1
	002-0367-02	Heat Element-{100V}(Includes Item 25)	1
27	H97971	Washer	2
28	045-0001-56	Lockwasher	2
29	H97949	Nut	2
30	H225617	Bracket	1

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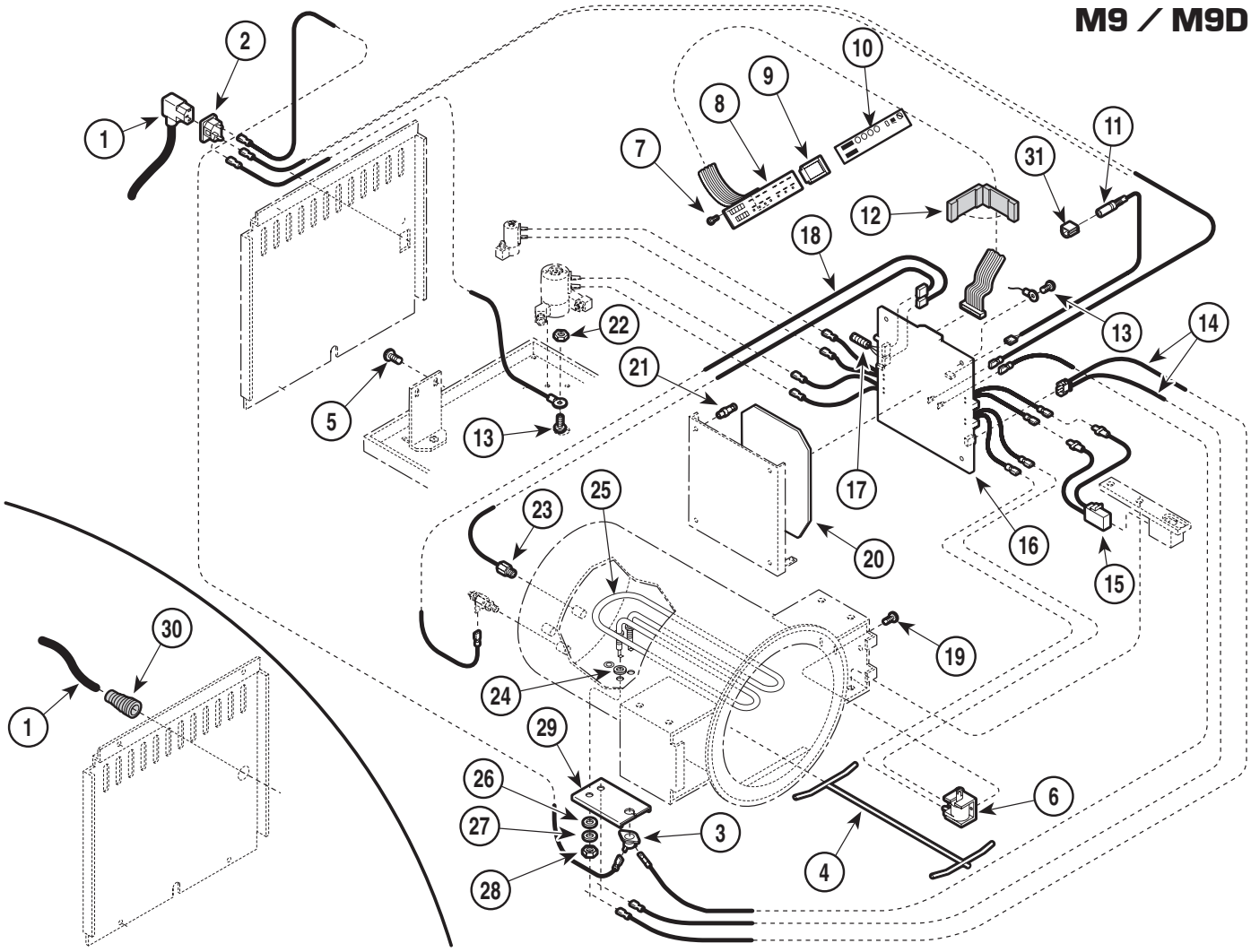
Electrical Components



MA376103

Used on Units with Serial Numbers:

CZ4591, DA1005, DB1150, DX1970, DY1139, FD1000, FK1000, FL1000, LA1000, and OM14724 - thru Present

Item	Part No.	Description	Qty.
1		Cordset (Refer to Wiring Diagram)	1
2	015-0639-00	AC Connector Receptacle	1
3	002-0370-00	Thermostat	1
4	057-0425-00	Spacer Assembly	1
5	040-0010-75	Screw	1
6	002-0363-00	Solenoid-{120V}	1
	002-0363-01	Solenoid-{240V}	1
	002-0363-02	Solenoid-{100V}	1
7	040-0006-04	Screw	6
8	002-0369-02	Display PC Board (Domestic)	1
	002-0369-03	Display PC Board (Export)	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	Display Overlay (Domestic)	1
	061-0272-00	Display Overlay (Export)	1
	061-0272-02	Display Overlay (French)	1
	061-0702-18	Display Overlay (Polish)	1
11		PCB/Printer Harness (Refer to "Printer Components" Elsewhere)	1
12	015-1096-00	Flat Cable EMI Suppression (Used Only On Certain Export Units)	1
13	040-0010-46	Screw	1
14	015-0657-00	PCB/Heater Harness	1
15	002-0362-00	Switch Assembly	1
16		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
17	015-0257-02	Flex Guard Tubing	1
18	015-0654-00	Chamber Level Sensor Harness	1
19	040-0010-74	Screw	2
20	053-0455-00	Insulator	1
21	053-0295-01	Standoff	3
22	041-0010-04	Locknut	1
23	002-0357-00	Temperature Probe Assembly	1
24	H98137	Gasket	2
25	002-0367-00	Heat Element-{120V}(Includes Item 24)	1
	002-0367-01	Heat Element-{230V}(Includes Item 24)	1
	002-0367-02	Heat Element-{100V}(Includes Item 24)	1
26	H97971	Washer	2
27	045-0001-56	Lockwasher	2
28	H97949	Nut	2
29	050-3503-00	Bracket	1
30	015-1137-00	Strain Relief Bushing (120 V. Units Only)	1
31	053-0389-01	Printer Harness Clip	1

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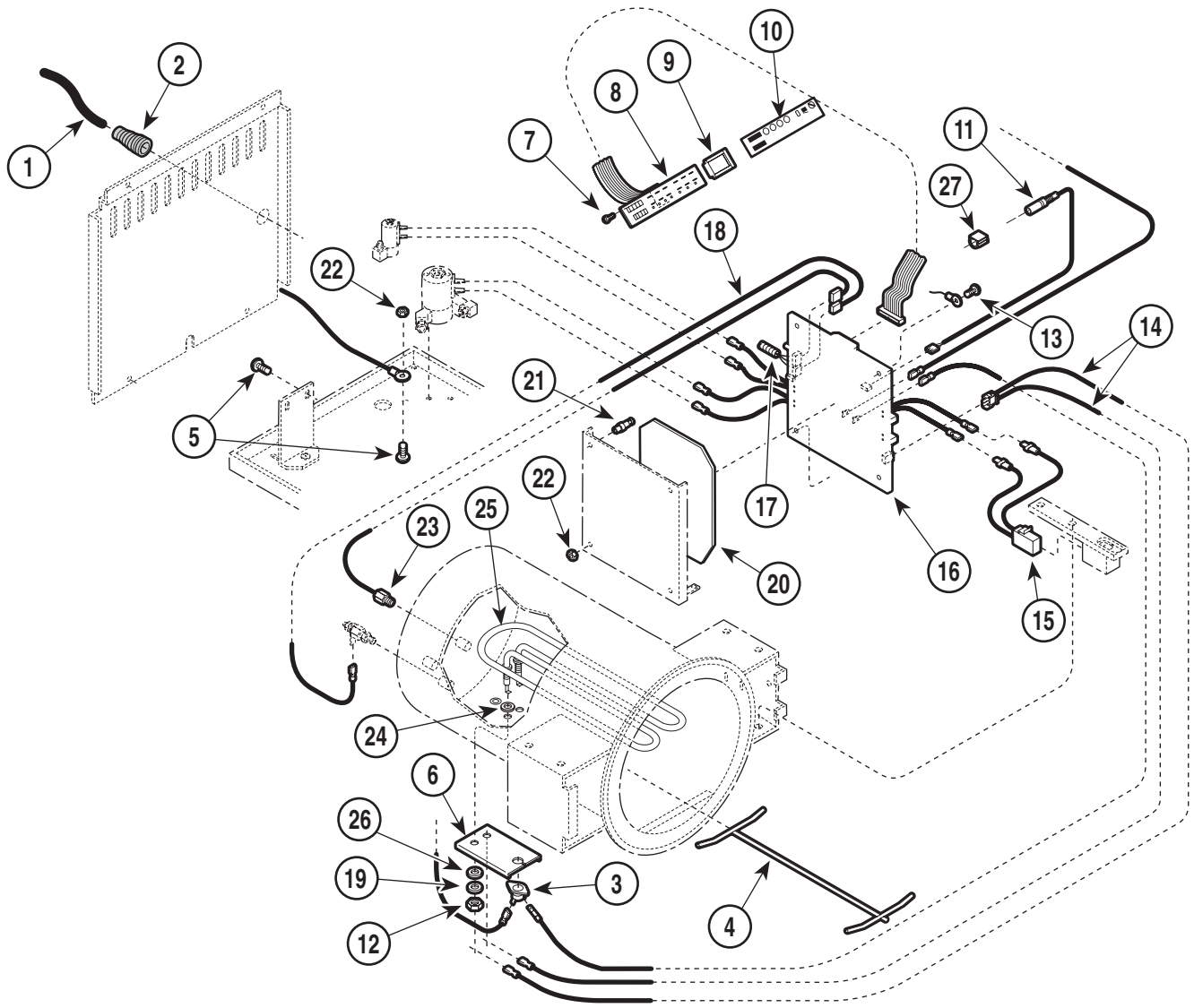
Electrical Components



MA442901

Used on Units with Serial Numbers: FF1055 and FG1138 - thru Present

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1		Cordset (Refer to Wiring Diagram)	1	15	002-0362-00	Switch Assembly	1
2	015-1137-00	Strain Relief Bushing	1	16		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
3	002-0370-00	Thermostat	1				
4	057-0425-00	Spacer Assembly	1	17	015-0257-02	Flex Guard Tubing	1
5	040-0010-75	Screw	1	18	015-0654-00	Chamber Level Sensor Harness	1
6	H225617	Bracket	1	19	045-0001-56	Lockwasher	2
7	040-0006-04	Screw	6	20	053-0455-00	Insulator	1
8	002-0369-02	Display PC Board	1	21	053-0295-01	Standoff	3
9	053-0454-00	Display Gasket	1	22	041-0010-04	Locknut	1
10	061-0531-00	Display Overlay	1	23	002-0357-00	Temperature Probe Assembly	1
11		PCB/Printer Harness (Refer to "Printer Components" Elsewhere)	1	24	H98137	Gasket	2
				25	002-0367-00	Heat Element (Includes Item 24)	1
12	H97949	Nut	2	26	H97971	Washer	2
13	040-0010-46	Screw	1	27	015-1395-00	Tubing Flex Guard	1
14	015-0657-00	PCB/Heater Harness	1				

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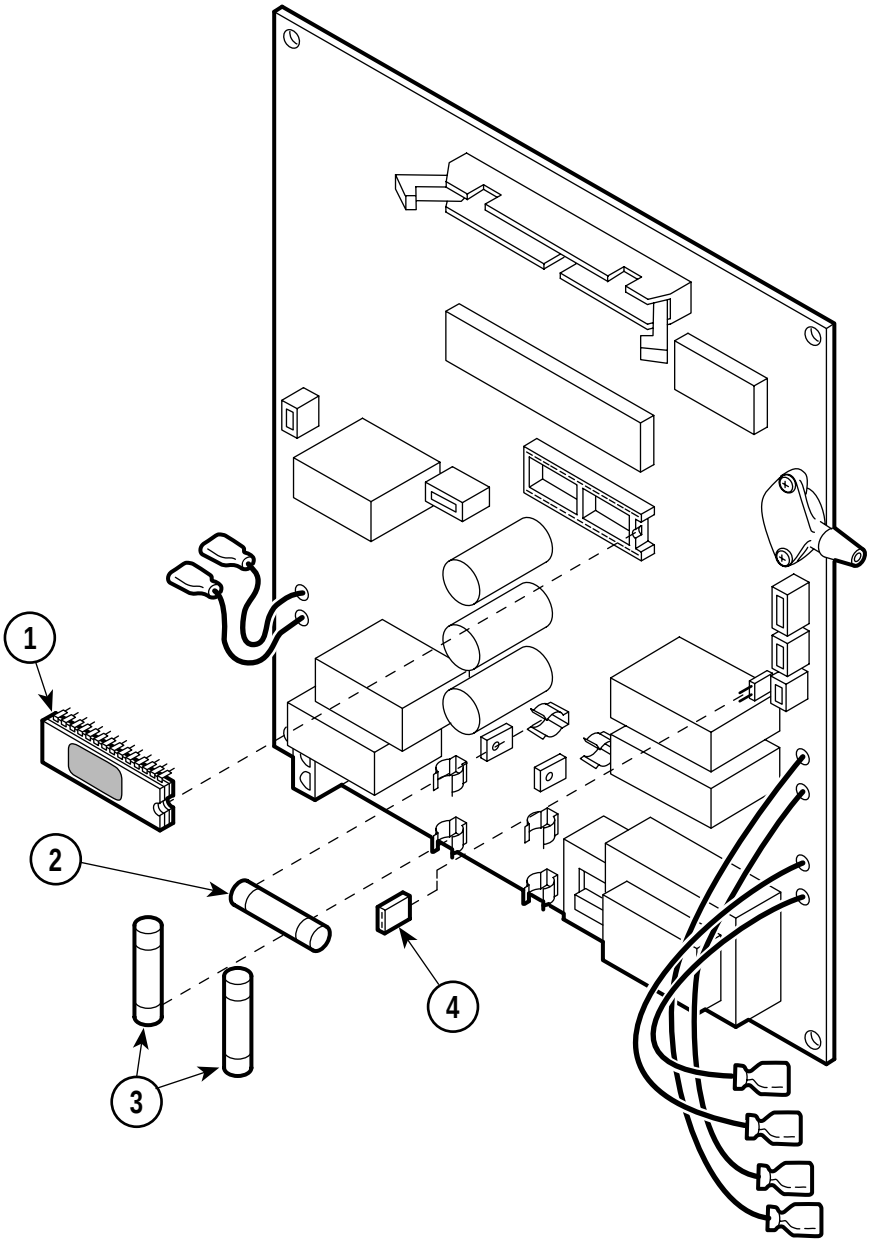
M9 Control PC Board



MA2220-01

Used on units with Serial Numbers:
CZ1000 thru CZ2456 DA1000 thru DA1004 DB1000 thru DB1149
DX1170 thru DX1969 DY1000 thru DY1138 OM1000 thru OM9448

Item	Part No.	Description	Qty.
	002-0434-00	Control PC Board {115 V Domestic} (Includes Item 1thru 3)	1
	002-0434-04	Control PC Board {230 V Export} (Includes Item 1 thru 3)	1
	002-0434-05	Control PC Board {100 V Export} (Includes Item 1 thru 4)	1
1	•	• M9 EPROM	Ref
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1
3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Domestic Units Only}	2
	• 015-0346-11	• Line Fuse (8 amp/250 V) {Used on 230 V Export Units Only}	2
	• 015-0346-06	• Line Fuse (20 amp/250 V) {Used on 100 V Export Units Only}	2
4	• 015-0880-00	• 2 Position Jumper {Used on 230 V & 100 V Export Units Only}	1

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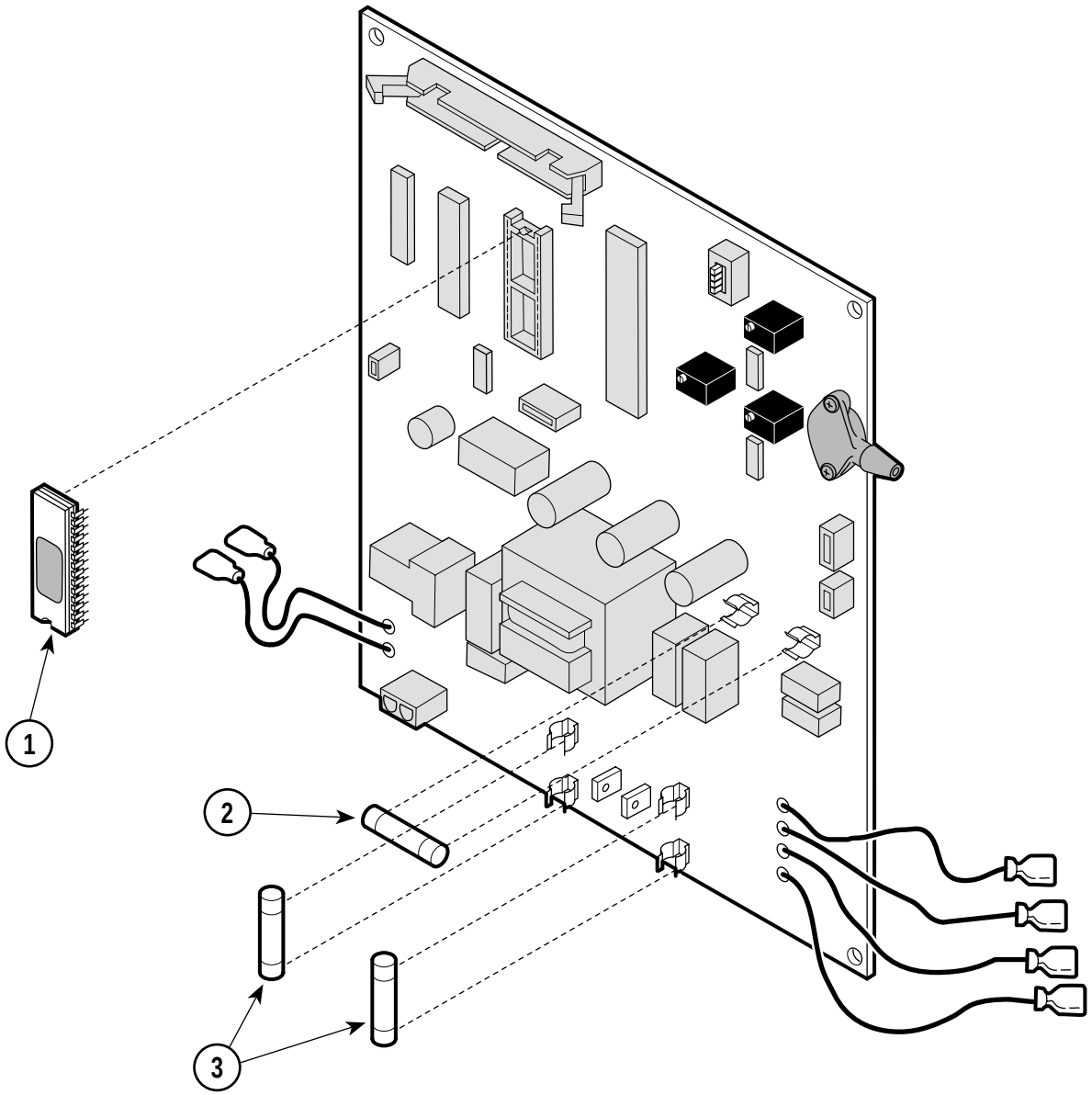
M9 Control PC Board



MA281100

Used on Units with Serial Numbers:
FD1000 thru FD1399

Item	Part No.	Description	Qty.
	002-0434-04	Control PC Board {230 V. French Export} (Includes Item 1thru 3)	1
1	•	• M9 EPROM	Ref
2	• 015-0346-08	• Printer Fuse (3 amp / 250 V.)	1
3	• 015-0346-11	• Line Fuse (8 amp / 250 V) {Used on 230 V Export Units Only}	2

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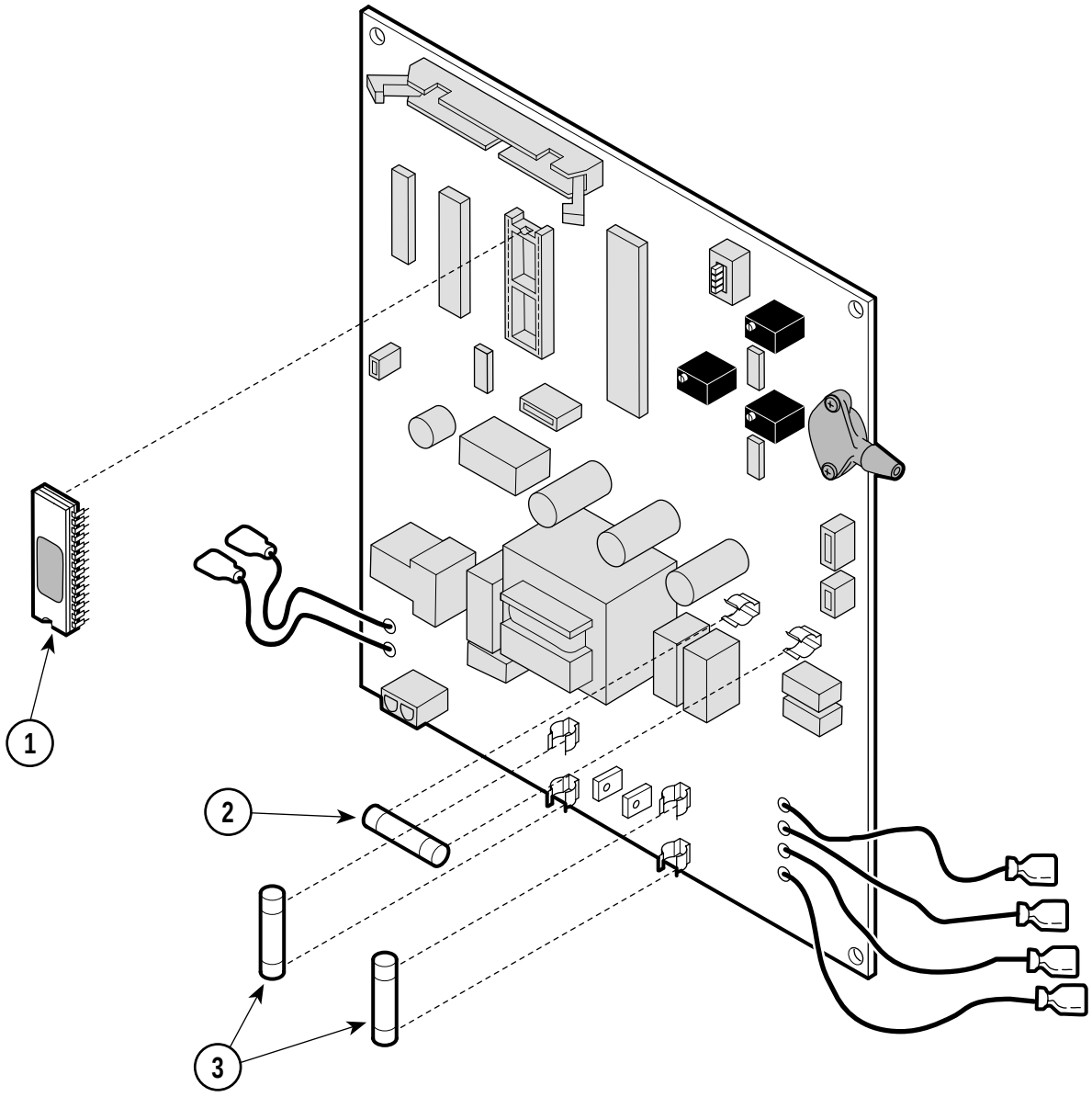
M9 Control PC Board



MA281100

Used on units with Serial Numbers:
CZ2457, DA1005, DB1150, DX1970, DY1139, FD1400, FK1000, FL1000, LA1000, and OM9449 - thru Present

Item	Part No.	Description	Qty.
	002-0434-03	Control PC Board {115 V Domestic} (Includes Item 1thru 3)	1
	002-0434-06	Control PC Board {230 V French Export} (Includes Item 1 thru 3)	1
	002-0434-04	Control PC Board {230 V Export} (Includes Item 1 thru 3)	1
	002-0434-05	Control PC Board {100 V Export} (Includes Item 1 thru 4)	1
1	•	• M9 EPROM	Ref
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1
3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Domestic Units Only}	2
	• 015-0346-11	• Line Fuse (8 amp/250 V) {Used on 230 V Export Units Only}	2
	• 015-0346-06	• Line Fuse (20 amp/250 V) {Used on 100 V Export Units Only}	2

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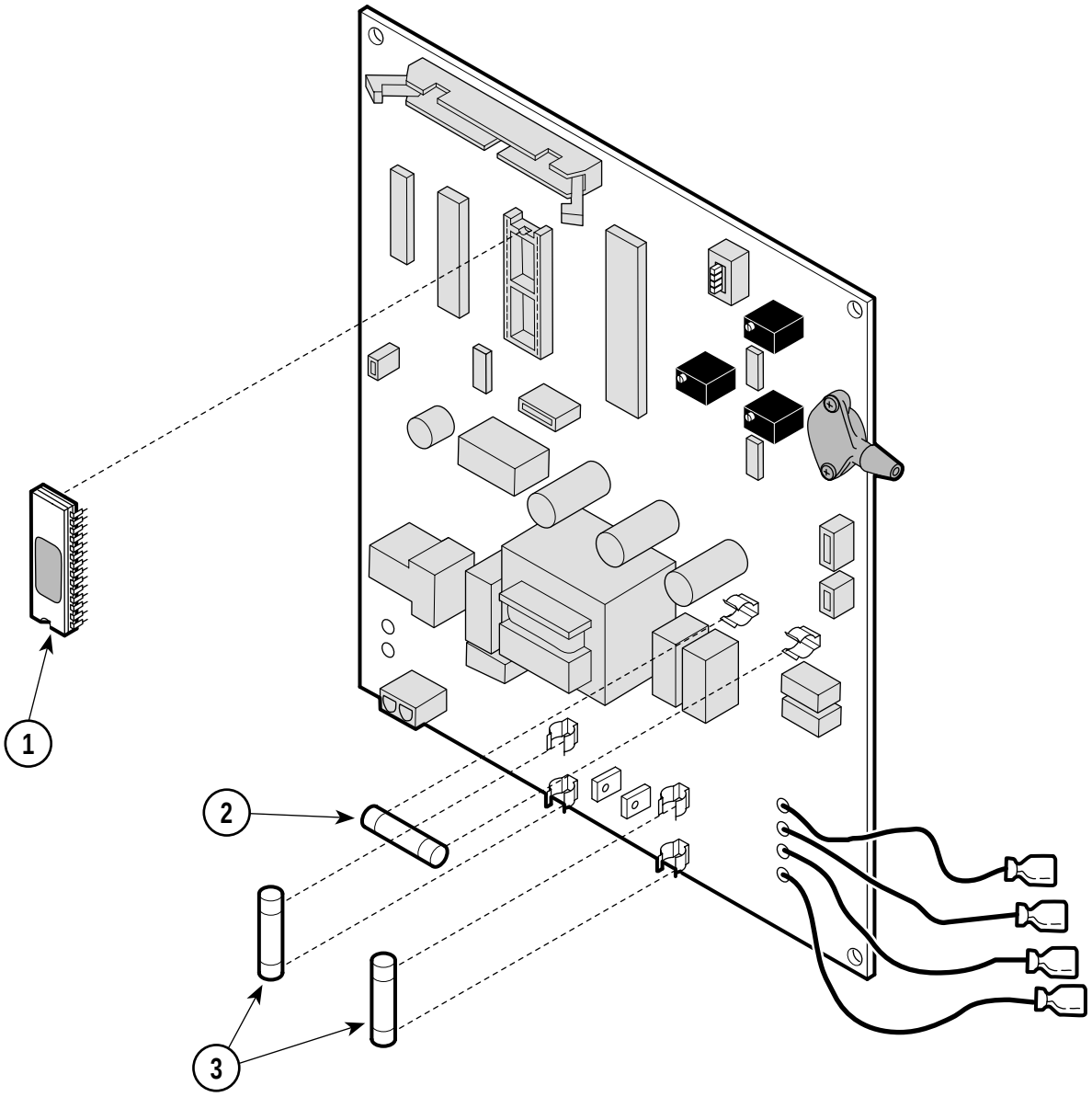
M9D Control PC Board



MA443000

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
	002-0518-00	Control PC Board {115 V} (Includes Item 1thru 3)	1	3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Units}	2
1	•	• M9 EPROM	Ref				
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1				

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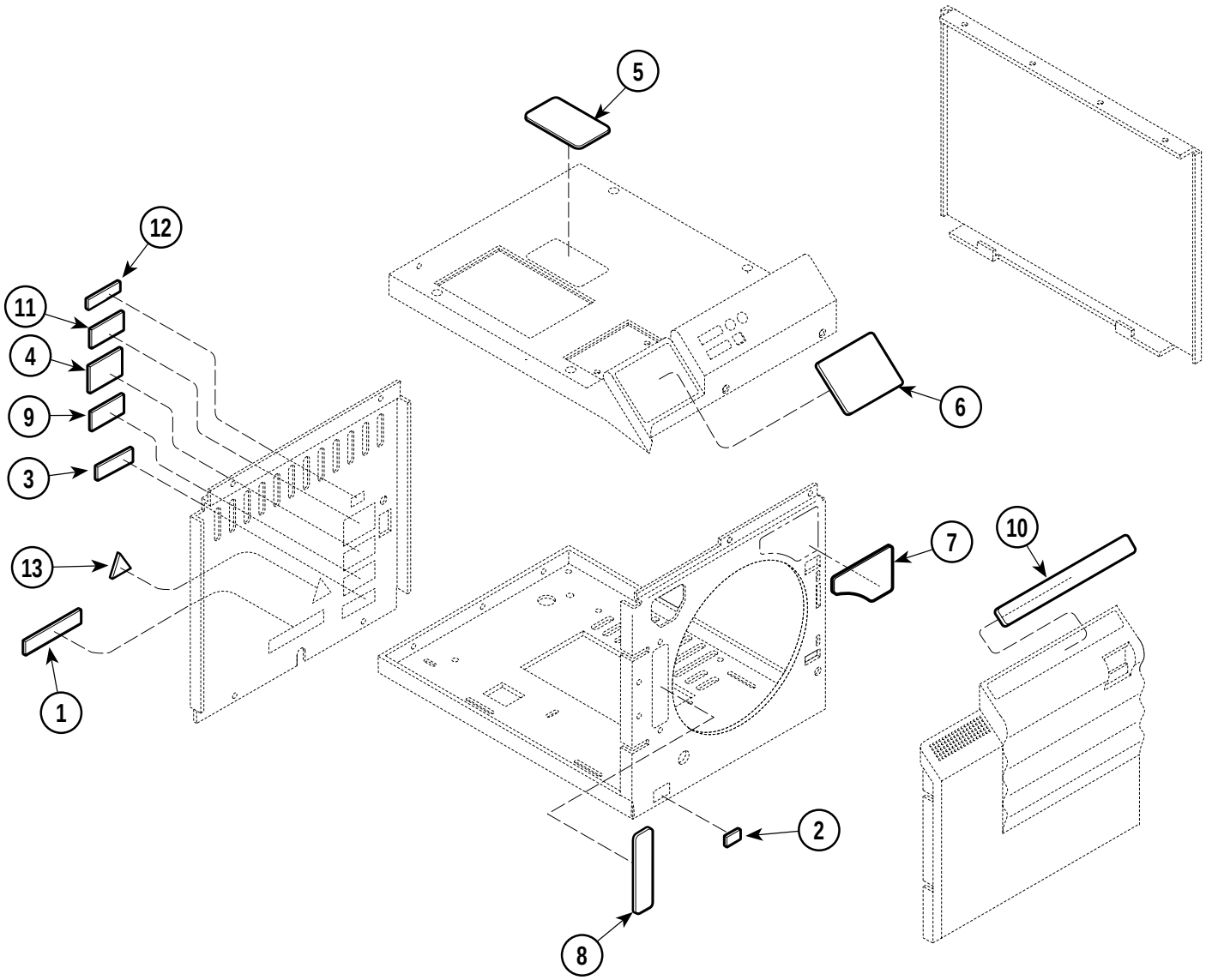
M9 Labels and Decals



MA202513

Item	Part No.	Description	Qty.
1	061-0203-00	Label - Electrical Shock (English)	1
	061-0516-00	Label -Electrical Shock (French)	1
	061-0600-00	Label -Electrical Shock (Portuguese)	1
2		Label - Serial Number (Front)	1
3	061-0477-00	Label - Patent	1
4		Label - Serial Number (Rear)	1
5	061-0309-00	Label - Warning, P.R. Valve (English)	1
	061-0514-00	Label - Warning, P.R. Valve (French)	1
	061-0597-00	Label - Warning, P.R. Valve (Portuguese)	1
	061-0704-18	Label - Warning, P.R. Valve (Polish)	1
6	061-0381-00	Label - Warning (English)	1
	061-0512-00	Label - Warning (French)	1
	061-0595-00	Label - Warning (Portuguese)	1
	061-0381-18	Label - Warning (Polish)	1

Item	Part No.	Description	Qty.
7	061-0726-00	Label - Hot Surface	1
8	061-0311-00	Label - Water Level	1
9	061-0624-00	UL / CUL 507U Label (Used on select units only)	1
10	061-0441-00	Label - Operation (English)	1
	061-0441-18	Label - Operation (Polish)	1
	061-0513-00	Label - Operation (French)	1
	061-0596-00	Label - Operation (Portuguese)	1
11	061-0782-00	CE Representative Label (Used on select units only)	1
12	061-0733-00	CE Label (Used on select units only)	1
13	061-0654-01	Label - Caution (Select units only)	1
14	004-0068-00	Laminated Instruction Sheet (Not Shown)	1
15	004-0254-00	Quick Reference Sheet (Not Shown)	1

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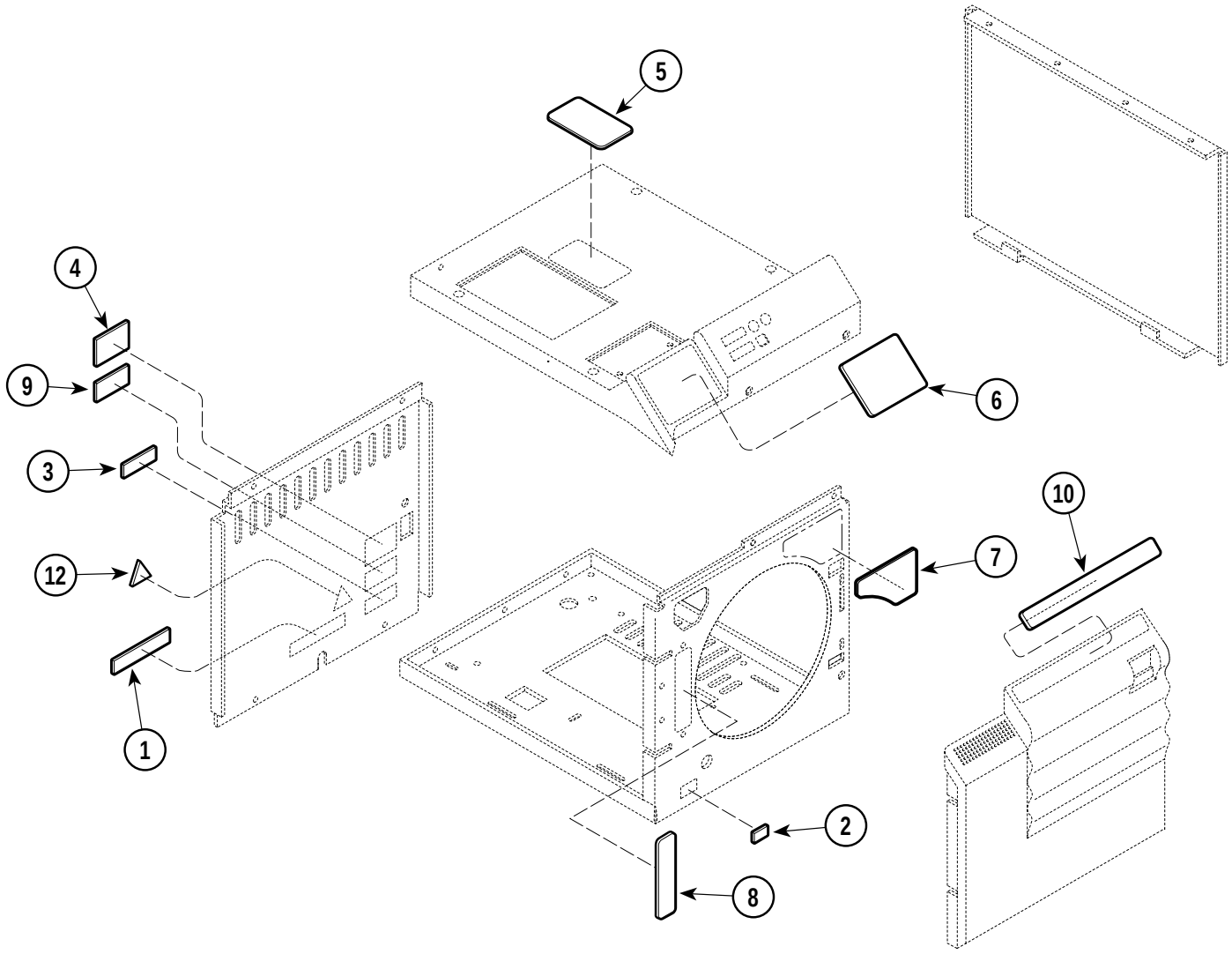
M9D Labels and Decals



MA443101

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	061-0203-00	Label - Electrical Shock	1	9	061-0624-00	UL / CUL 507U Label	1
2		Label - Patent (Front)	1	10	061-0533-00	Label - Operation	1
3	061-0477-00	Label - Patent (Rear)	1	11	061-0534-00	Sterilizer Label Set (Not Shown Includes Items 5, 6 & 10)	1
4		Label - Serial Number	1				
5	061-0309-01	Label - Warning, P.R. Valve	1	12	061-0654-00	Label - Caution	1
6	061-0532-00	Label - Warning	1	13	004-0068-00	Laminated Instruction Sheet (Not Shown)	1
7	061-0591-00	Label - Hot Surface	1	14	004-0254-00	Quick Reference Sheet (Not Shown)	1
8	061-0311-00	Label - Water Level	1				

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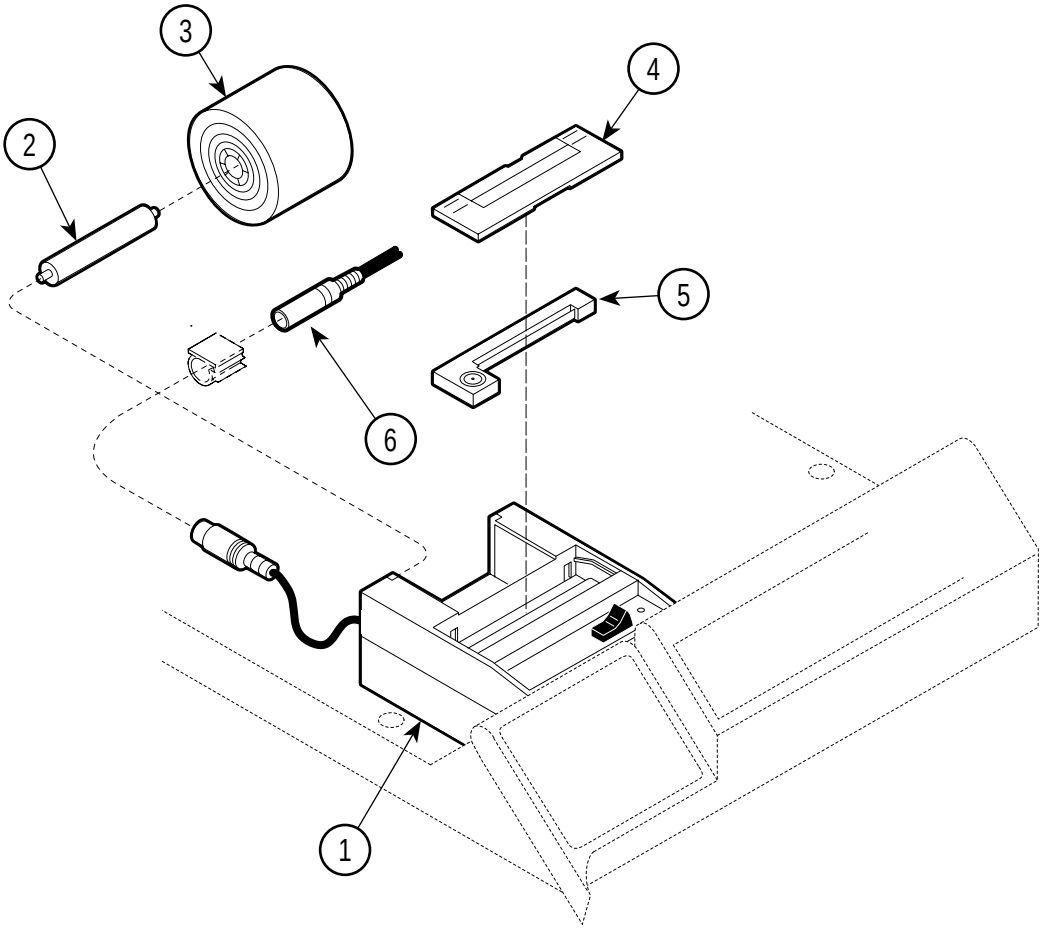
Printer Components



MA203302

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	9A155001	Accessory Printer (Incl. Items 2 thru 6) .	1	5	• 053-0505-00	• Printer Cartridge	1
2	• 053-0506-00	• Arbor	1	6	• 015-0978-00	• Printer Wiring Harness	1
3	• 060-0008-00	• Paper Roll	1	7	002-0371-00	Cartridge/Paper Kit (Includes Two Rolls of Paper and One Cartridge	1
4	• 053-0507-00	• Cover	1				

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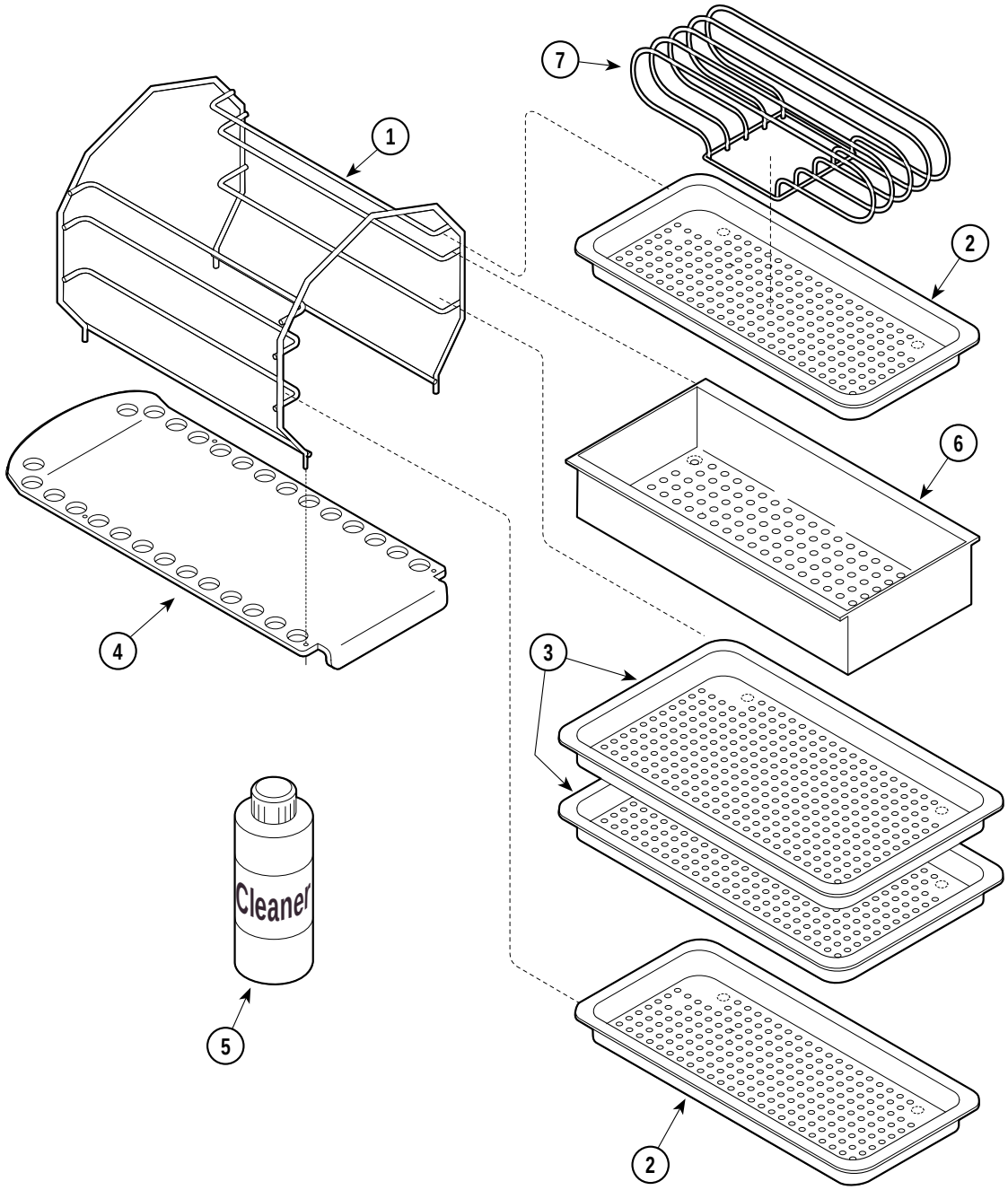
Racks, Trays, and Cleaner



MA203201

Used on Units with Serial Numbers:

CZ1000 thru CZ4334 **DA1000 thru DA1004** **DB1000 thru DB1237** **DX1000 thru DX2555**
DY1000 thru DY1176 **FD1000 thru FD1399** **FF1000 thru FF1034** **FG1000 thru FG1112**
FK1000 thru FK1699 **FL1000 thru FL1474** **OM1000 thru OM14524**

Item	Part No.	Description	Qty.
1	030-0710-01	Wire Tray Rack	1
2	002-0253-00	5" Tray	2
3	002-0374-00	7" Tray	2
4	050-1773-00	Tray Plate	1
5	002-0269-00	Sterilizer Cleaner-Ritter (Single Bottle with M.S.D.Sheet)	AR
	002-0269-01	Sterilizer Cleaner-Ritter (12 Bottle Case with M.S.D.Sheet)	AR
	002-0396-00	Sterilizer Cleaner-Midmark (Single Bottle with M.S.D.Sheet)	AR
	002-0396-01	Sterilizer Cleaner-Midmark (12 Bottle Case with M.S.D.Sheet)	AR
6	9A224001	Sterilizer Deep Tray	1
7	9A226001	Sterilizer Pouch Rack	1

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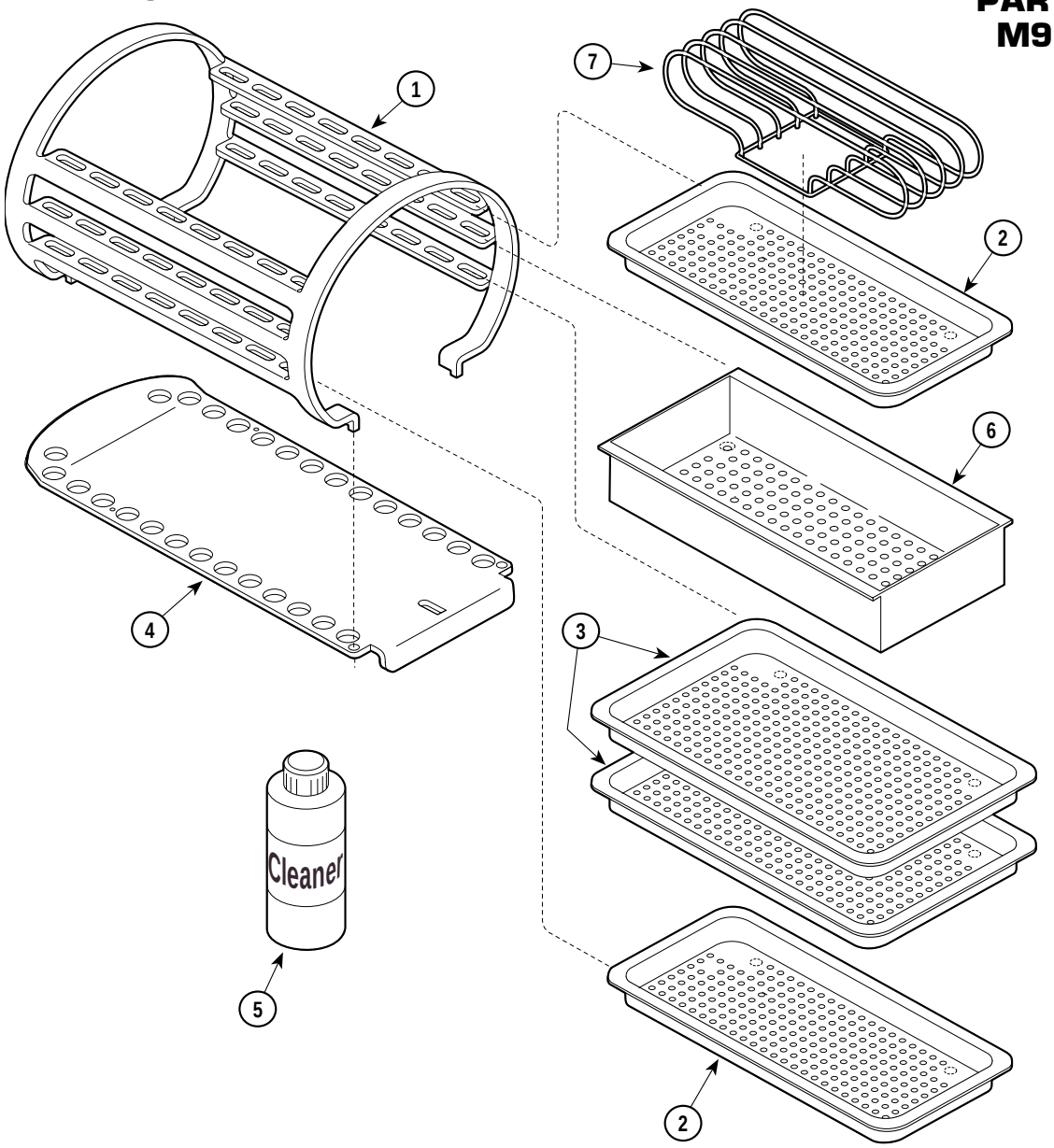
Racks, Trays, and Cleaner



MA376300

Used on units with Serial Numbers:
CZ4335, DA1005, DB1238, DX2556, DY1177, FD1400, FF1035, FG1113, FK1700, FL1475, LA1000, OM14525 - thru Present

Item	Part No.	Description	Qty.
1	050-3691-00	Wire Tray Rack	1
2	002-0253-00	5" Tray	2
3	002-0374-00	7" Tray	2
4	050-3750-00	Tray Plate	1
5	002-0269-00	Sterilizer Cleaner-Ritter (Single Bottle with M.S.D.Sheet)	AR
	002-0269-01	Sterilizer Cleaner-Ritter (12 Bottle Case with M.S.D.Sheet)	AR
	002-0396-00	Sterilizer Cleaner-Midmark (Single Bottle with M.S.D.Sheet)	AR
	002-0396-01	Sterilizer Cleaner-Midmark ([12] 16 oz. Bottle Case with M.S.D.Sheet)	AR
	002-0396-02	Sterilizer Cleaner-Midmark ([32] 16 oz. Bottle Case with M.S.D.Sheet)	AR
	002-0396-03	Sterilizer Cleaner-EMS ([32] 16 oz. Bottle Case with M.S.D.Sheet)	AR
6	9A224001	Sterilizer Deep Tray	1
7	9A226001	Sterilizer Pouch Rack	1

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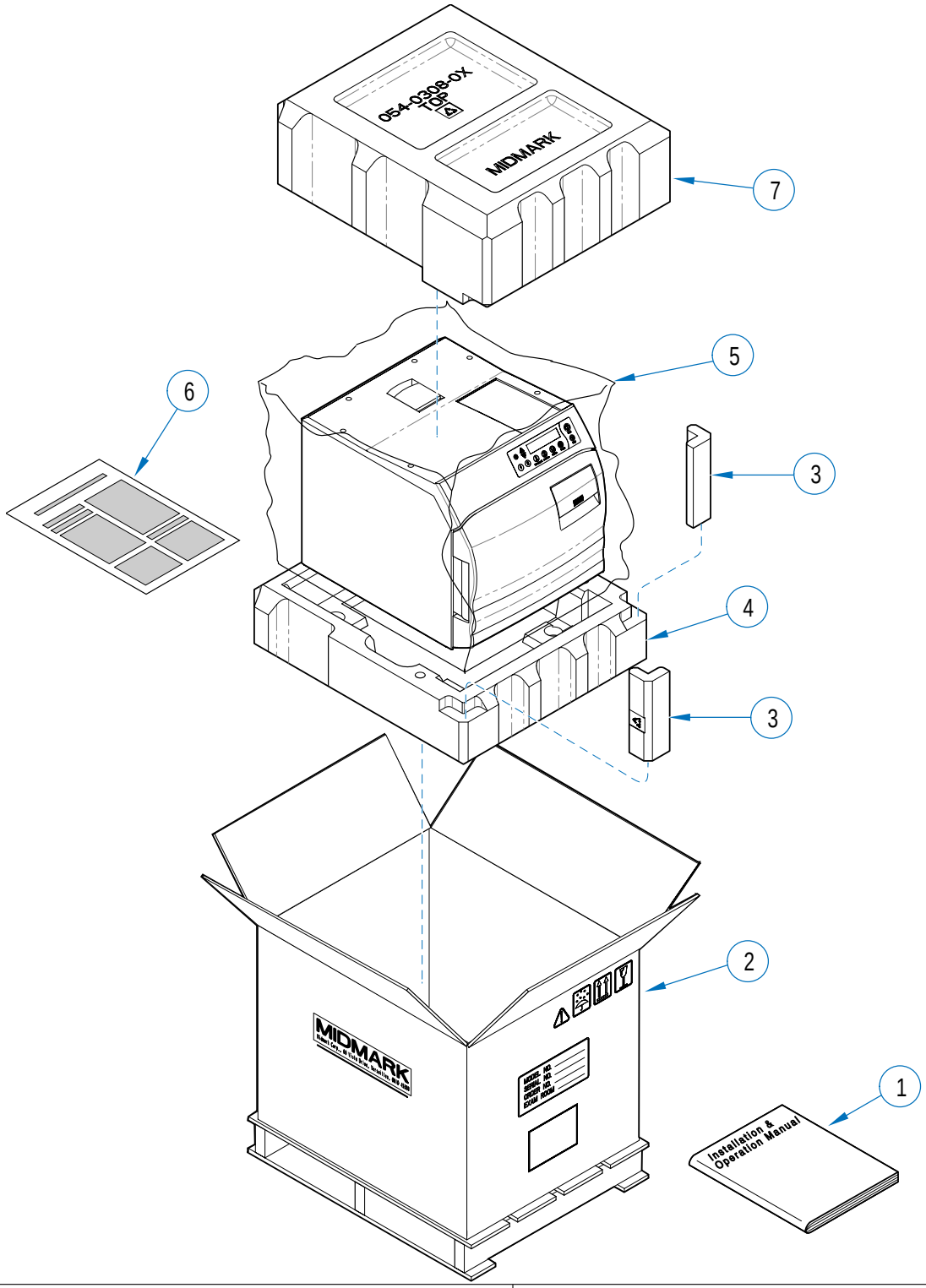
Packaging



MA202406

Item	Part No.	Description	Qty.
1	003-1031-00	M9 Installation & Operation Manual (English)	1
	003-1033-00	M9D Installation & Operation Manual (English)	1
	003-0920-02	M9 Installation & Operation Manual (French)	1
	003-0920-18	M9 Installation & Operation Manual (Polish)	1
2	066-0721-00	Slotted Carton	1
3	054-0309-00	Corner Pad	2
4	054-0308-00	Bottom Pad	1
5	053-0061-01	Poly Bag	1
6	077-0033-00	Speed Clean Material Data Sheet	1
7	054-0310-00	Top Pad	1
8	002-0532-00	Ritter M9 Packaging Kit (Includes Items 2, 3, 4, 5 & 7)	1
	002-0532-01	Midmark M9 Packaging Kit (Includes Items 2, 3, 4, 5 & 7)	1

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SECTION VI
PARTS LIST

Attention!

The Parts Lists in this manual are separated as shown below.
Verify model number, then refer to appropriate pages.

M9 / M9D ..... Pages 6-2 thru 6-16

M11 / M11D ..... Pages 6-17 thru 6-31

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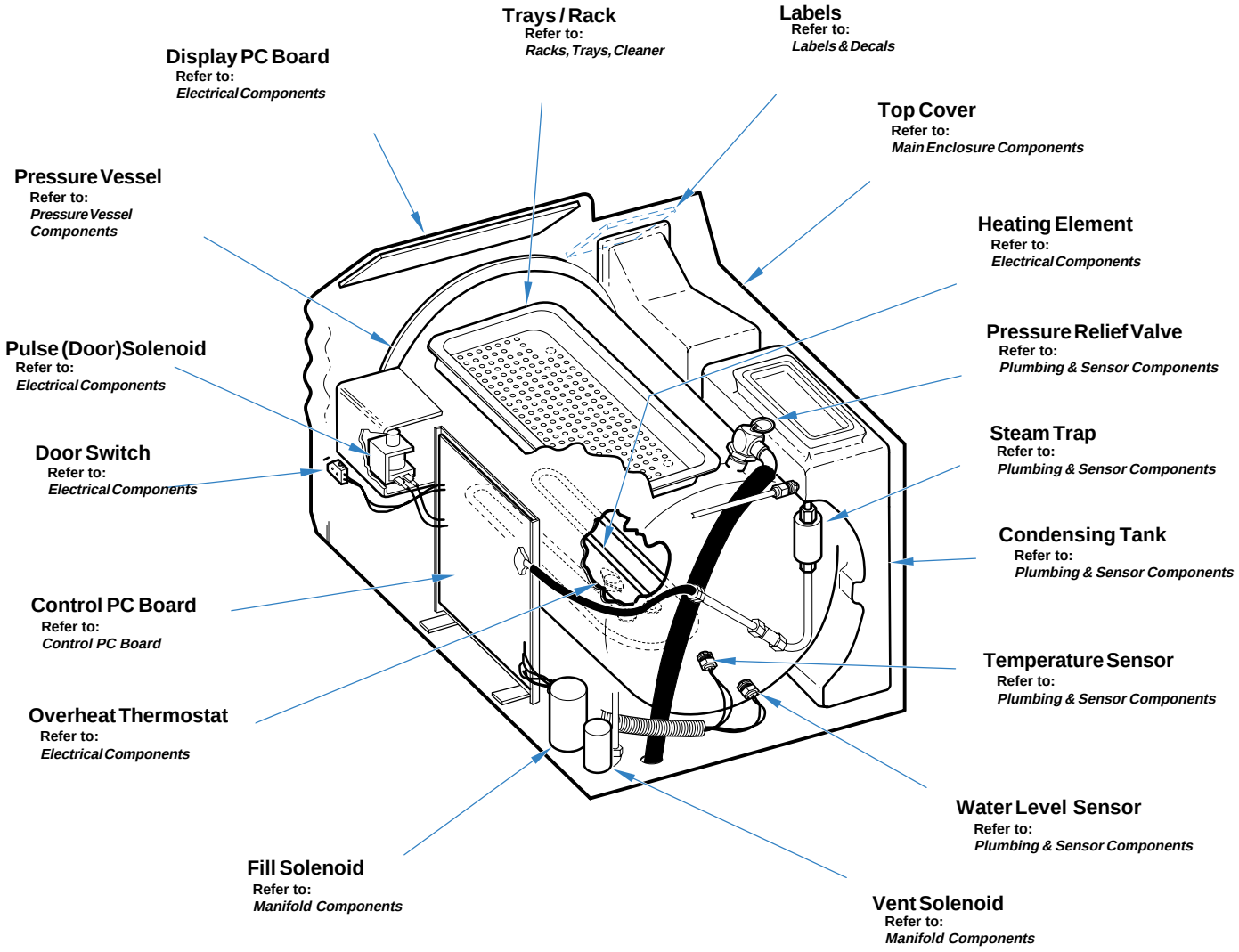
M11 Component / Page Cross-Reference



MA

Item	Model No.	Description	Page
	M11-001	Ritter M11 Ultraclave (120VAC) *[serial number prefix "ES"]*	6-17
	M11-002	Midmark M11 Ultraclave (120VAC) *[serial number prefix "ET"]*	6-17
	M11-003	Ritter M11 Ultraclave (230 VAC) *[serial number prefix "FP"]*	6-17
	M11-004	Midmark M11 Ultraclave (230 VAC) *[serial number prefix "FR"]*	6-17
	M11-005	EMS M11 Ultraclave (230 VAC) *[serial number prefix "GB"]*	6-17
	M11-006	M11 Ultraclave - UK (230VAC, CE) *[serial number prefix "NP"]*	6-17

Always Specify Model & Serial Number

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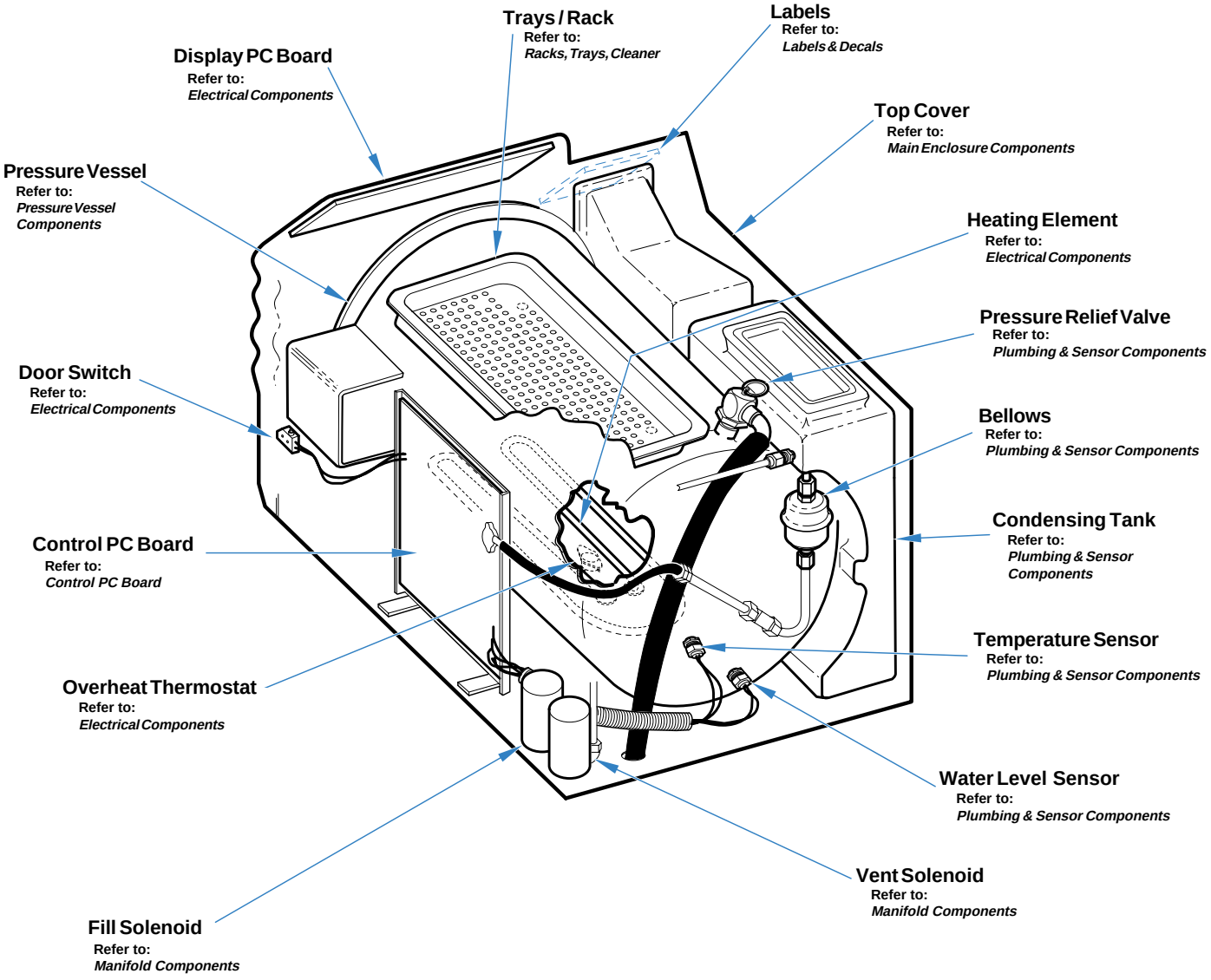
M11D Component / Page Cross-Reference



MA600800i

Item	Model No.	Description	Page	Item	Model No.	Description	Page
	M11D-001	Ritter M11D Ultraclave (120 VAC *[serial number prefix "GC"]*	6-18		M11D-002	Midmark M11D Ultraclave (120 VAC) *[serial number prefix "GD"]*	6-18

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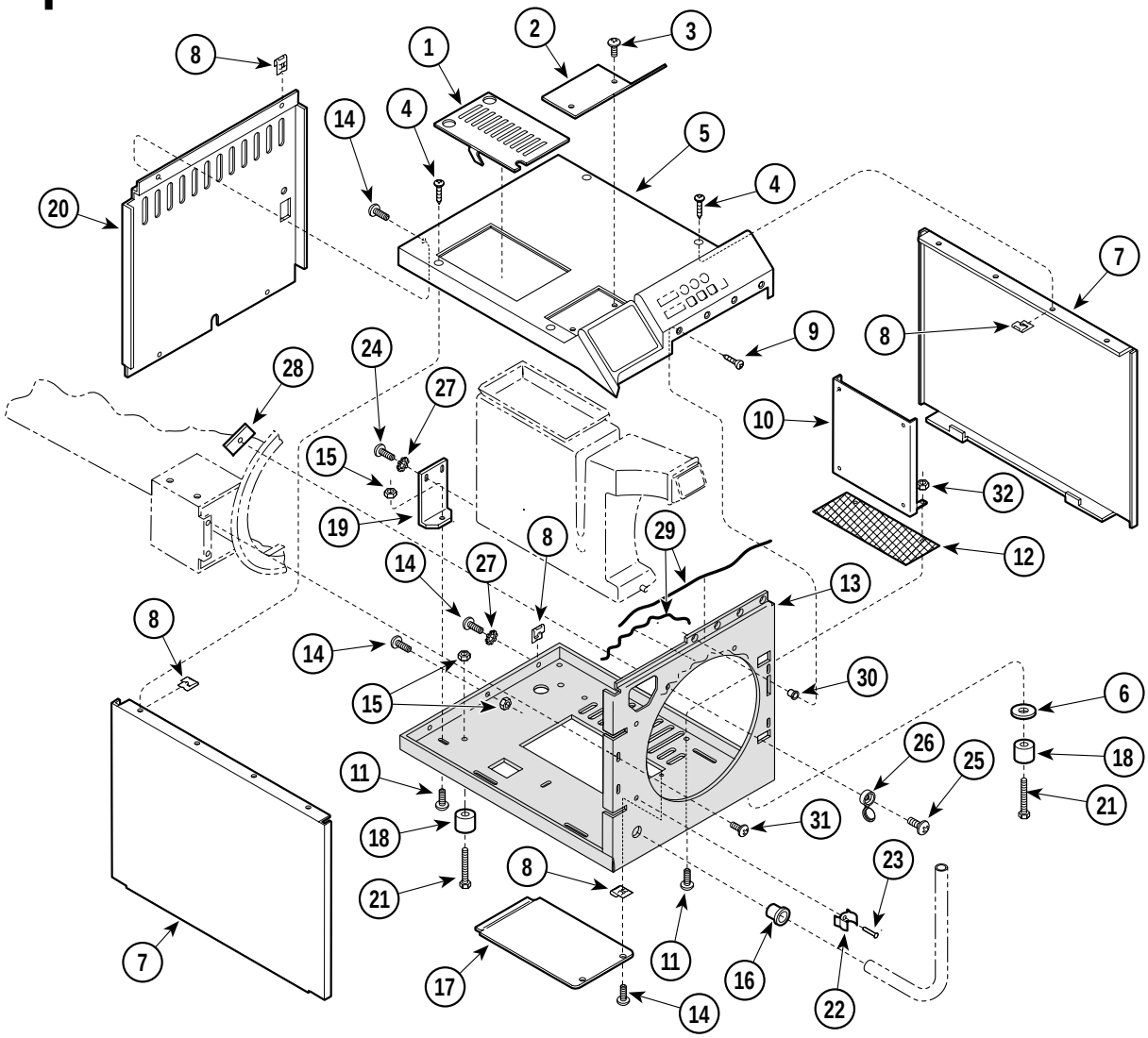
Main Enclosure Components



MA225405

Used on units with Serial Numbers:
ES1347 thru ES3020 ET1095 thru ET3317
GC1000 thru GC1018 GD1000 thru GD1015

Item	Part No.	Description	Qty.
1	030-1117-00	Top Inspection Cover	1
2	050-2638-00	Cover Plate - Printer	1
3	040-0008-87	Screw	2
4	040-0010-88	Screw	4
5		Top Cover Assembly Kit (includes all Decals and Display Gasket)	
	002-0503-00	M11	1
	002-0503-01	M11D	1
6	045-0001-00	Washer	AR
7	050-2589-00	Side Panel	2
8	H352623	Tinnerman Clip	11
9	040-0010-112	Screw	4
10	050-3996-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-04	Screen	1
13	050-2588-00	Base	1
14	040-0010-125	Screw	6
15	041-0010-02	Nut	6
16	053-0068-11	Snap Bushing	1
17	050-4326-01	Base Inspection Cover	1
18	016-0523-01	Leveler Foot	4
19	050-1778-00	Condensing Tank Bracket	1
20	050-2587-00	Back Panel	1
21	040-0010-44	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	040-0010-74	Screw	2
25	040-0010-124	Screw	2
26	053-0723-00	Screw Cover	2
27	045-0001-31	Lockwasher	3
28	050-4750-00	Flange Clamp	2
29	042-0021-00	Adhesive	AR
30	042-0045-01	Nutsert	4
31	040-0010-95	Screw	4
32	041-0010-04	Nut - w/Starwasher	2

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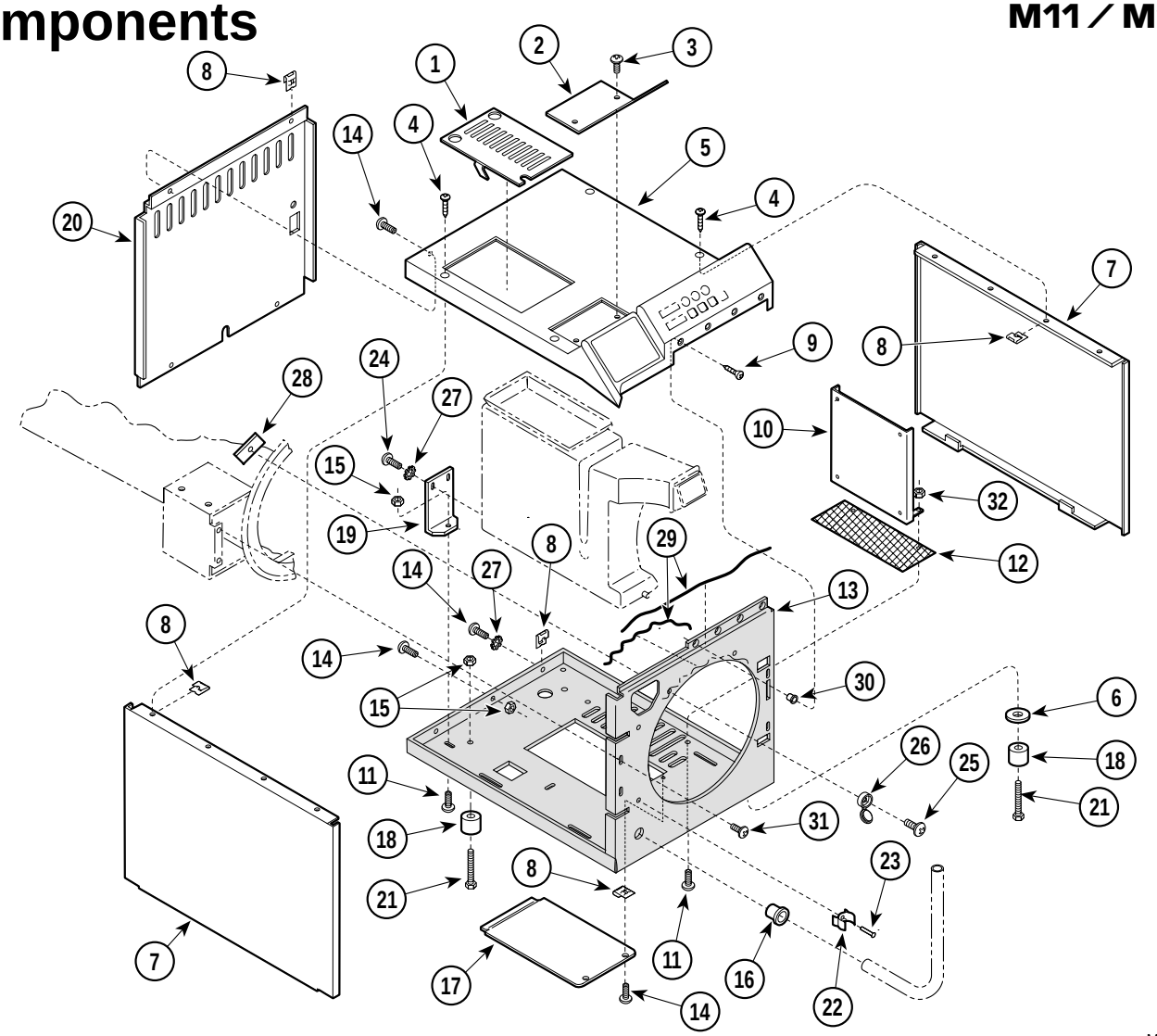
Main Enclosure Components



MA225405

Used on units with Serial Numbers:

ES3021 thru ES3376 ET3318 thru ET3893 FP1000 thru FP1063
FR1000 thru FR1100 GB1000 thru GB1044 GC1019 thru GC1020

Item	Part No.	Description	Qty.
1	030-1117-00	Top Inspection Cover	1
2	050-2638-00	Cover Plate - Printer	1
3	040-0008-87	Screw	2
4	040-0010-88	Screw	4
5		Top Cover Assembly Kit (Incls. all Decals and Display Overlay)	
	002-0503-00	M11	1
	002-0503-01	M11D	1
	002-0503-02	M11 (w/ metric display overlay)	1
	002-0503-03	M11 (w/ French display overlay)	1
6	045-0001-00	Washer	AR
7	050-2589-00	Side Panel	2
8	H352623	Tinnerman Clip	11
9	040-0010-112	Screw	4
10	050-3996-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-04	Screen	1
13	050-2588-00	Base	1
14	040-0010-125	Screw	6
15	041-0010-02	Nut	6
16	053-0068-11	Snap Bushing	1
17	050-4326-01	Base Inspection Cover	1
18	016-0523-01	Leveler Foot	4
19	050-1778-00	Condensing Tank Bracket	1
20	050-2587-00	Back Panel (230 V. units only)	1
	050-2587-01	Back Panel (120 V. units only)	1
21	040-0010-44	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	040-0010-74	Screw	2
25	040-0010-124	Screw	2
26	053-0723-00	Screw Cover	2
27	045-0001-31	Lockwasher	3
28	050-4750-00	Flange Clamp	2
29	042-0021-00	Adhesive	AR
30	042-0045-01	Nutsert	4
31	040-0010-95	Screw	4
32	041-0010-04	Nut - w/Starwasher	2

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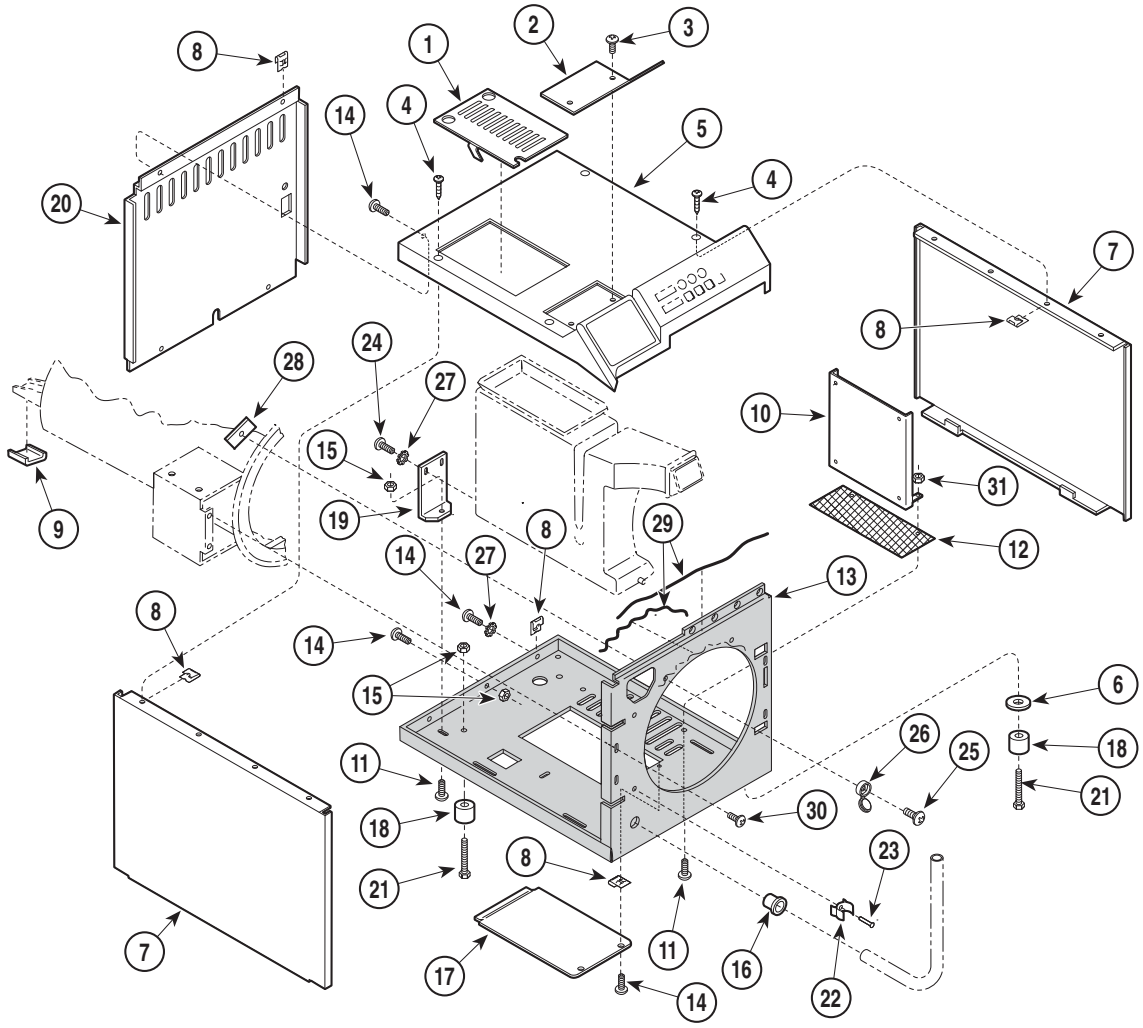
Main Enclosure Components



MA225406

Used on units with Serial Numbers:

ES3377 thru ES4879 GB1043 thru GB1109 | ET3319 thru ET6315 GC1020 thru GC1074 | FP1064 thru FP6315 GD1016 thru GD1064 | FR1101 thru FR1203

Item	Part No.	Description	Qty.
1	030-1117-00	Top Inspection Cover	1
2	050-2638-00	Cover Plate - Printer	1
3	040-0008-87	Screw	2
4	040-0010-88	Screw	4
5		Top Cover Assembly Kit (incls. all decals and display overlay)	
	002-0503-00	M11	1
	002-0503-01	M11D	1
	002-0503-02	M11 (w/ metric display overlay)	1
	002-0503-03	M11 (w/ French display overlay)	1
6	053-0923-00	Washer (Used on Early Units Only)	2
7	050-2589-00	Side Panel	2
8	H352623	Tinnerman Clip	11
9	050-3987-00	Spacer	1
10	050-3996-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-04	Screen	1
13	050-2588-00	Base	1
14	040-0010-125	Screw	6
15	041-0010-02	Nut	6
16	053-0068-11	Snap Bushing	1
17	050-4326-01	Base Inspection Cover	1
18	016-0523-01	Leveler Foot4 2	
19	050-1778-00	Condensing Tank Bracket	1
20	050-2587-01	Back Panel (120 V. units only)	1
	050-2587-00	Back Panel (230 V. units only)	1
21	040-0010-44	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	040-0010-74	Screw	2
25	040-0010-124	Screw	2
26	053-0723-00	Screw Cover	2
27	045-0001-31	Lockwasher	3
28	050-4750-00	Flange Clamp	2
29	042-0021-00	Adhesive	AR
30	040-0010-95	Screw	4
31	041-0010-04	Nut - w/Starwasher	2

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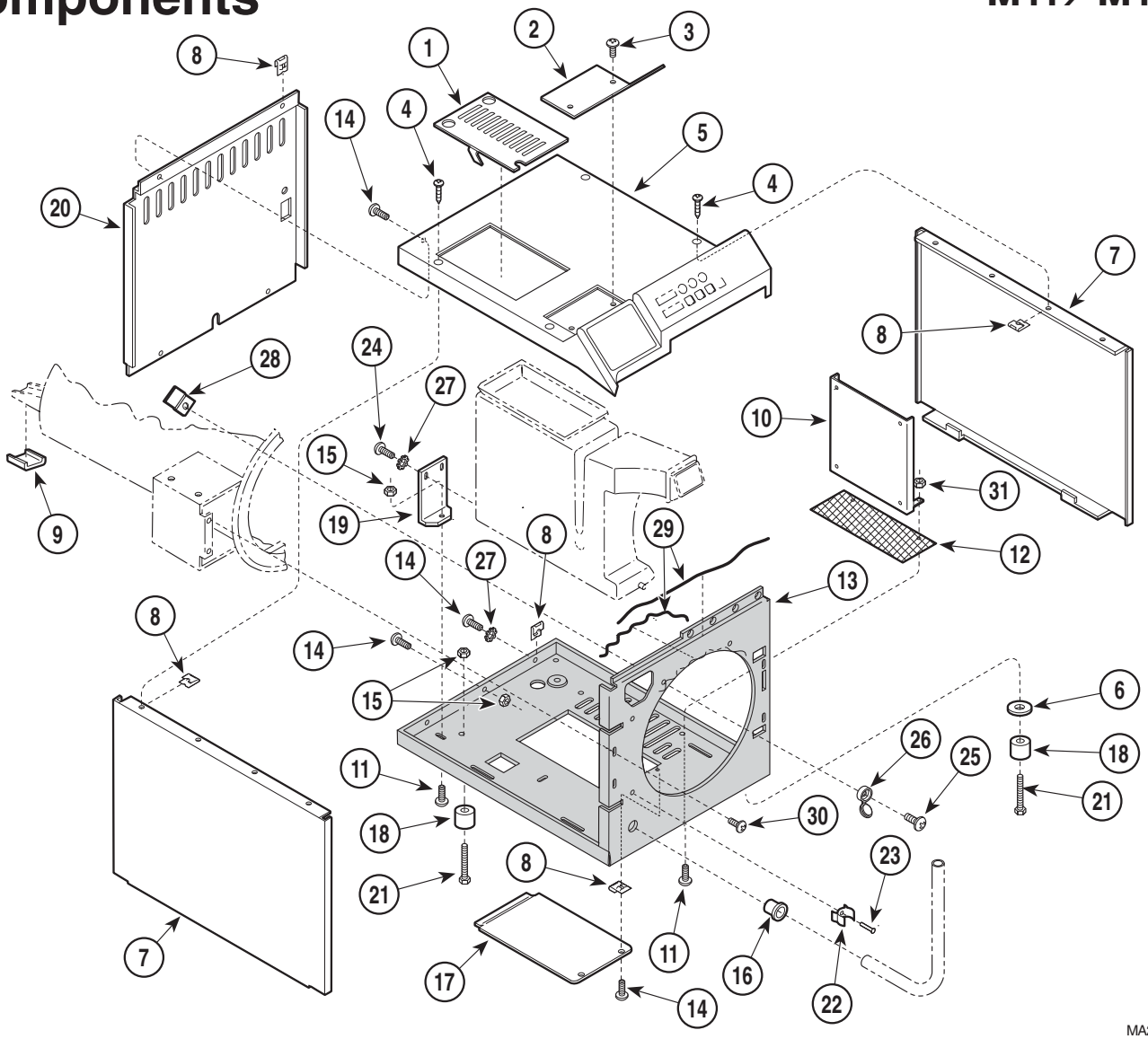
Main Enclosure Components



MA225408

Used on units with Serial Numbers:
ES4880, ET6316, FP6316, FR1204, GB1110, GC1075, GD1065, NP1000 - thru Present

Item	Part No.	Description	Qty.
1	030-1117-00	Top Inspection Cover	1
2	050-2638-00	Cover Plate - Printer	1
3	040-0008-50	Screw	2
4	040-0010-88	Screw	4
5		Top Cover Assembly Kit (incls. all decals and display overlay)	
	002-0503-00	M11	1
	002-0503-01	M11D	1
	002-0503-02	M11 (w/ metric display overlay)	1
	002-0503-03	M11 (w/ French display overlay)	1
6	053-0923-00	Washer (Used on Early Units Only)	2
7	050-2589-00	Side Panel	2
8	H352623	Tinnerman Clip	11
9	050-3987-00	Spacer	1
10	050-3996-00	Control PCB Bracket	1
11	040-0010-75	Screw	3
12	016-0428-04	Screen	1
13	050-4722-00	Base	1
14	040-0010-125	Screw	6
15	041-0010-02	Nut	5
16	053-0068-11	Snap Bushing	1
17	050-4326-00	Base Inspection Cover	1
18	016-0523-01	Leveler Foot	4
19	050-1778-00	Condensing Tank Bracket	1
20	050-3860-00	Back Panel (230 V. units only)	1
	050-3860-01	Back Panel (120 V. units only)	1
21	040-0010-44	Screw	4
22	053-0388-01	Hose Clip	2
23	042-0010-21	Pop Rivet	2
24	040-0010-74	Screw	2
25	040-0010-124	Screw	2
26	053-0723-00	Screw Cover	2
27	045-0001-31	Lockwasher	3
28	050-4750-00	Flange Clamp	2
29	042-0021-00	Adhesive	AR
30	040-0010-95	Screw	5
31	041-0010-04	Nut - w/Starwasher	2

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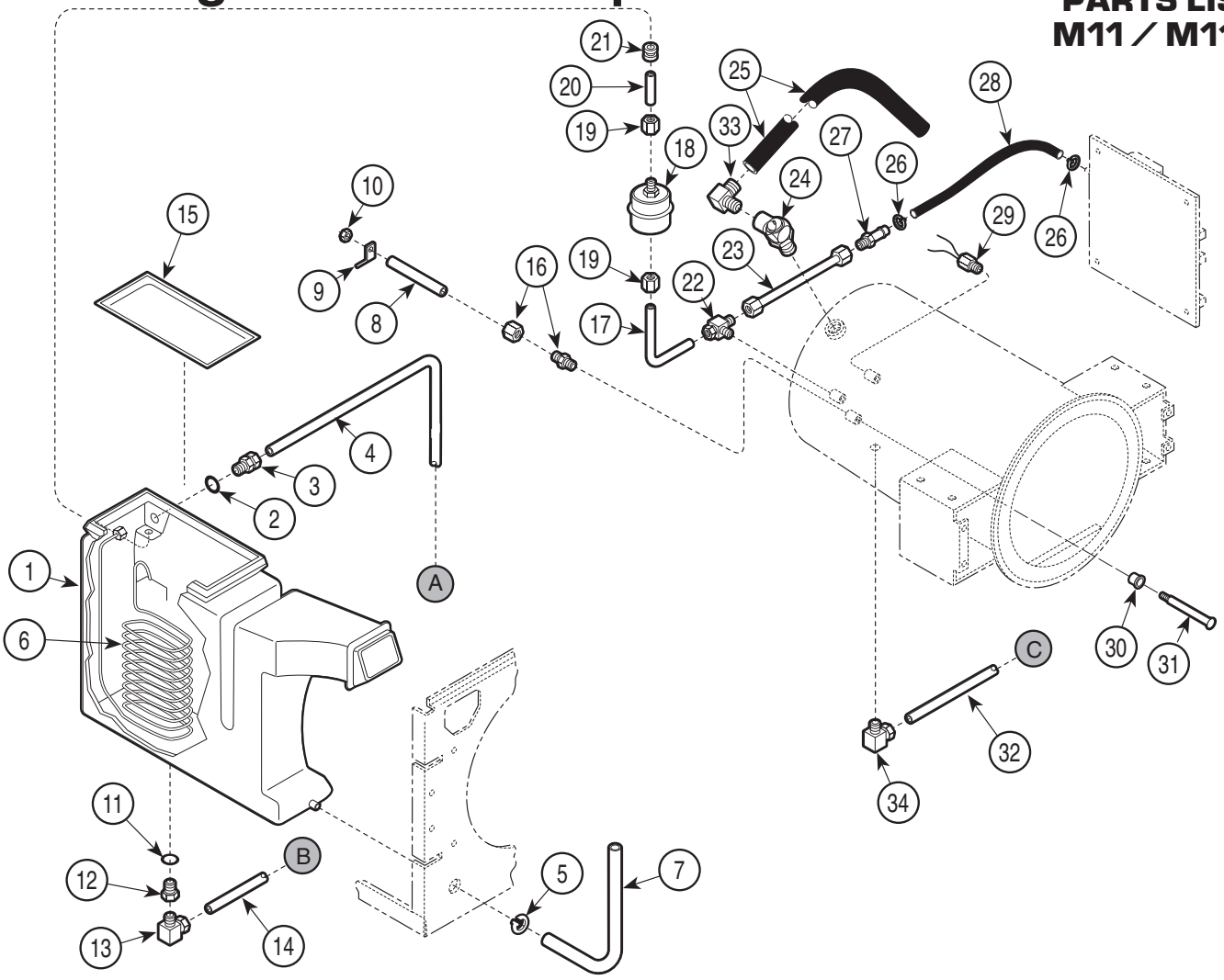
Plumbing & Sensor Components



MA201915

Used on units with Serial Numbers:

ES1000 thru ES4300 GB1000 thru GB1094 ET1000 thru ET5399 GC1000 thru GC1035 FP1000 thru FP1072 GD1000 thru GD1049 FR1000 thru FR1177

Item	Part No.	Description	Qty.
1	*(N.L.A.)*	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	1
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0251-00	Tube **(M11)**	1
	014-0279-00	Tube **(M11D)**	1
5	016-0748-01	Nylon Hose Clamp	1
6	052-0173-00	Condensing Coil	1
7	053-0391-01	Hose	1
8	002-0358-00	Level Sensor Tube (Includes items 9,10,16,30,31)	1
9	015-0595-00	Terminal	1
10	041-0006-02	Locknut	1
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0255-00	Tube	1
15	*(N.L.A.)*	Condensing Tank Lid (See Item #1)	1
16	014-0212-00	Connector	1
17	014-0252-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	053-0394-01	Grommet	1
22	014-0202-00	Male Branch Tee	1
23	014-0207-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-00	Pressure Relief Valve - 35 PSI (Apply Teflon Tape) (Includes Elbow, Item 35)	1
25	053-0613-02	Tube - Pressure Relief	1
26	015-0013-05	Cable Tie (High Temp)	2
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-02	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly (Apply Teflon Tape)	1
30	053-0407-00	Spacer	1
31	030-0858-00	Level Sensor Assembly	1
32	014-0250-00	Tube	1
33	014-0258-00	Male 90° Elbow	1
34	014-0184-01	Male Elbow	1
[*]	002-0593-00	Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	

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N.L.A. Denotes "No Longer Available"

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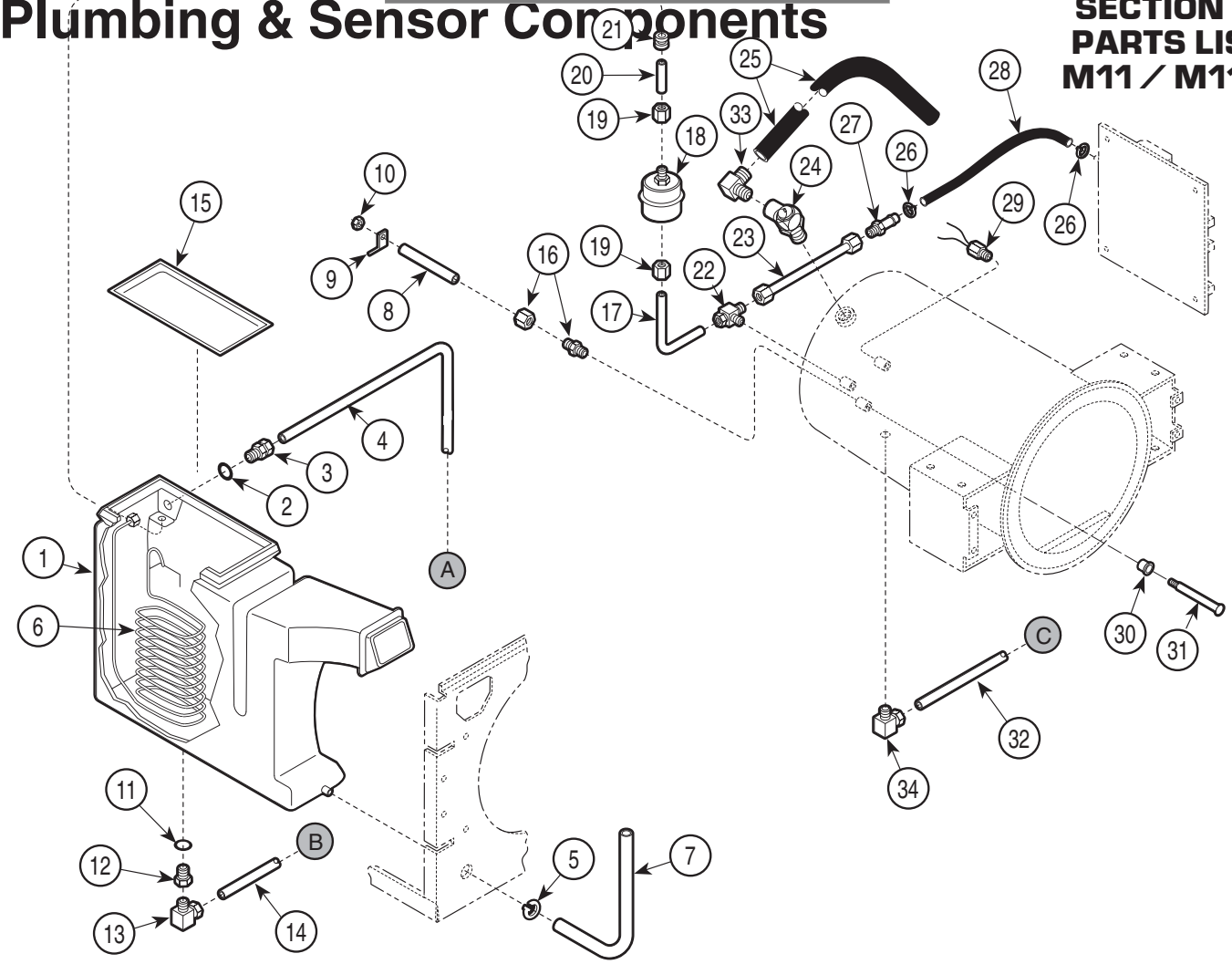
Plumbing & Sensor Components



MA201915

Used on units with Serial Numbers:

ES4301 thru ES5751 ET5400 thru ET7341 FP1073 thru FP1075 FR1178 thru FR1246
GB1095 thru GB1129 GC1036 thru GC1093 GD1050 thru GD1102

Item	Part No.	Description	Qty.
1	*(N.L.A.)*	Condensing Tank (Includes Item 15)	1
2	H98137	Gasket	1
3	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
4	014-0251-00	Tube **(M11)**	1
	014-0279-00	Tube **(M11D)**	1
5	016-0748-01	Nylon Hose Clamp	1
6	052-0173-00	Condensing Coil	1
7	053-0391-01	Hose	1
8	002-0358-00	Level Sensor Tube (Includes items 9,10,16,30, and 31)	1
9	015-0595-00	Terminal	1
10	041-0006-02	Locknut	1
11	053-0393-00	O-ring	1
12	014-0209-00	Bulkhead Couple	1
13	014-0184-01	Male Elbow	1
14	014-0255-00	Tube	1
15	*(N.L.A.)*	Condensing Tank Lid (See Item #1)	1
16	014-0212-00	Connector	1
17	014-0252-00	Tube	1
18	002-0375-00	Bellows Assembly	1
19	014-0392-00	Compression Nut (Refer to Kit [*])	2
20	014-0208-00	Tube	1
21	053-0394-01	Grommet	1
22	014-0202-00	Male Branch Tee	1
23	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
24	002-0359-00	Pressure Relief Valve - 35 PSI (Apply Teflon Tape) (Includes Elbow, Item 35)	1
25	053-0613-02	Tube - Pressure Relief	1
26	015-0013-05	Cable Tie (High Temp)	2
27	014-0217-00	Compression Connector (Refer to Kit [*])	1
28	053-0404-05	Tube-PCB Connector (Refer to Kit [*])	1
29	002-0357-00	Temperature Probe Assembly (Apply Teflon Tape)	1
30	053-0407-00	Spacer	1
31	030-0858-00	Level Sensor Assembly	1
32	014-0250-00	Tube	1
33	014-0258-00	Male 90° Elbow	1
34	014-0184-01	Male Elbow	1
[*]	002-0593-00	Pressure Sensor Tube Kit (Includes #'s 19, 23, 26, 27, & 28)	

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N.L.A. Denotes "No Longer Available"

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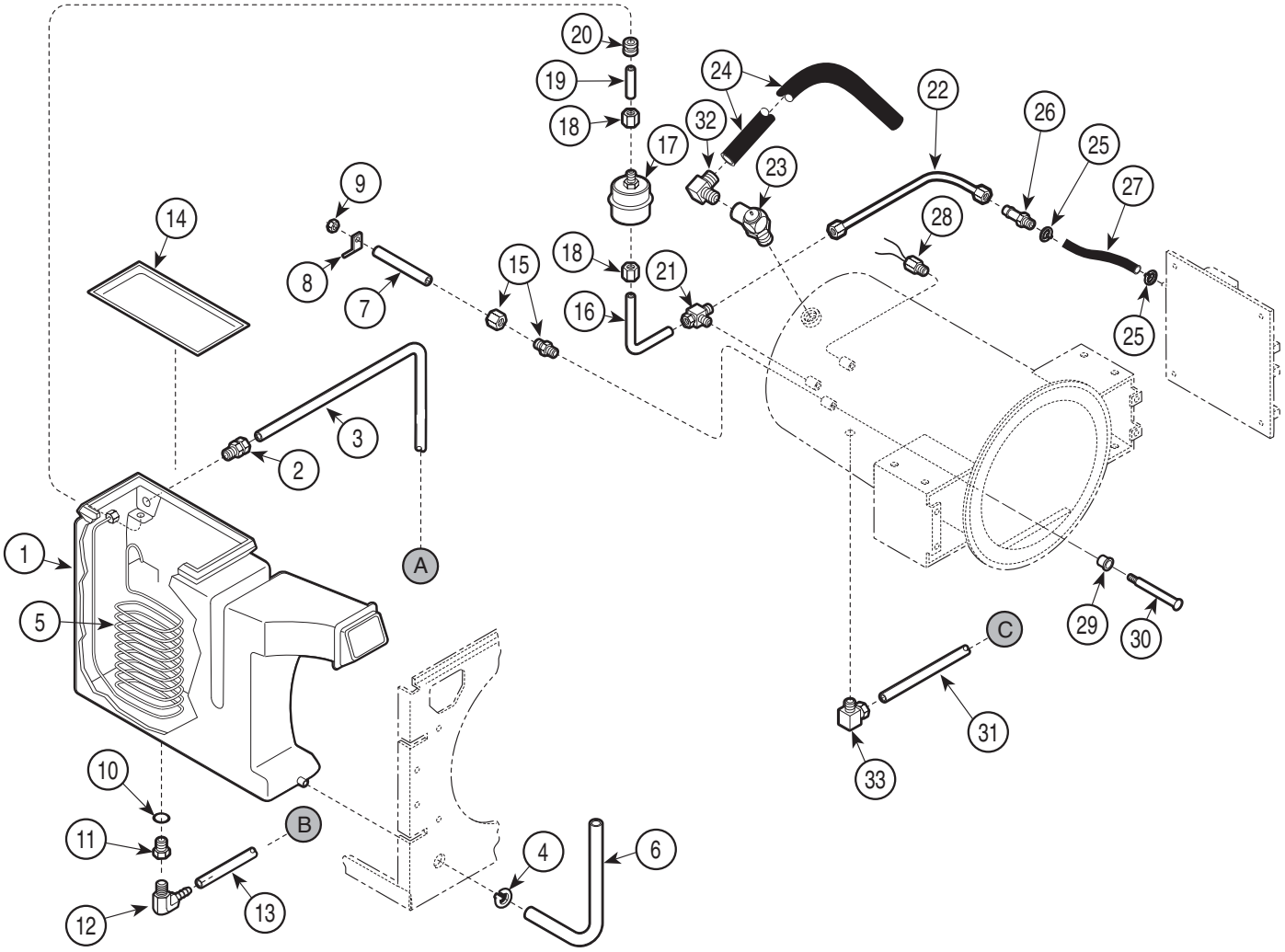
Plumbing & Sensor Components



MA511004

Used on units with Serial Numbers:

ES5752 thru ES8308 ET7342 thru ET12157 FP1076 thru FP1148
FR1147 thru FR1412 GB1129 thru GB1130 NP1000 thru NP1004

Item	Part No.	Description	Qty.
1	*(N.L.A.)*	Condensing Tank (Includes Item 15)	1
2	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
3	014-0251-00	Tube	1
4	016-0748-01	Nylon Hose Clamp	1
5	052-0173-00	Condensing Coil	1
6	053-0391-01	Hose	1
7	002-0358-00	Level Sensor Tube (Includes items 8, 9,15, 29, and 30)	1
8	015-0595-00	Terminal	1
9	041-0006-02	Locknut	1
10	053-0393-00	O-ring	1
11	014-0209-00	Bulkhead Couple	1
12	014-0348-00	Barb Fitting Elbow	1
13	053-1033-02	Norprene Tube	1
14	*(N.L.A.)*	Condensing Tank Lid (See Item #1)	1
15	014-0212-00	Connector	1
16	014-0252-00	Tube	1
17	002-0375-00	Bellows Assembly	1
18	014-0392-00	Compression Nut (Refer to Kit [*])	2
19	014-0208-00	Tube	1
20	053-0394-01	Grommet	1
21	014-0202-00	Male Branch Tee	1
22	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
23	002-0359-01	Pressure Relief Valve - 40 PSI (Apply Teflon Tape) (Includes Elbow, Item 32)	1
24	053-0613-02	Tube - Pressure Relief	1
25	015-0013-05	Cable Tie (High Temp)	2
26	014-0217-00	Compression Connector (Refer to Kit [*])	1
27	053-0404-05	Tube-PCB Connector (Refer to Kit [*])	1
28	002-0357-00	Temperature Probe Assembly29 (Apply Teflon Tape)	0
29	053-0407-00	Spacer	1
30	030-0858-00	Level Sensor Assembly	1
31	014-0250-00	Tube	1
32	014-0258-00	Male 90° Elbow	1
33	014-0184-01	Male Elbow	1
[*]	002-0593-00	Pressure Sensor Tube Kit (Includes #'s 18, 22, 25, 26, & 27)	

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N.L.A. Denotes "No Longer Available"

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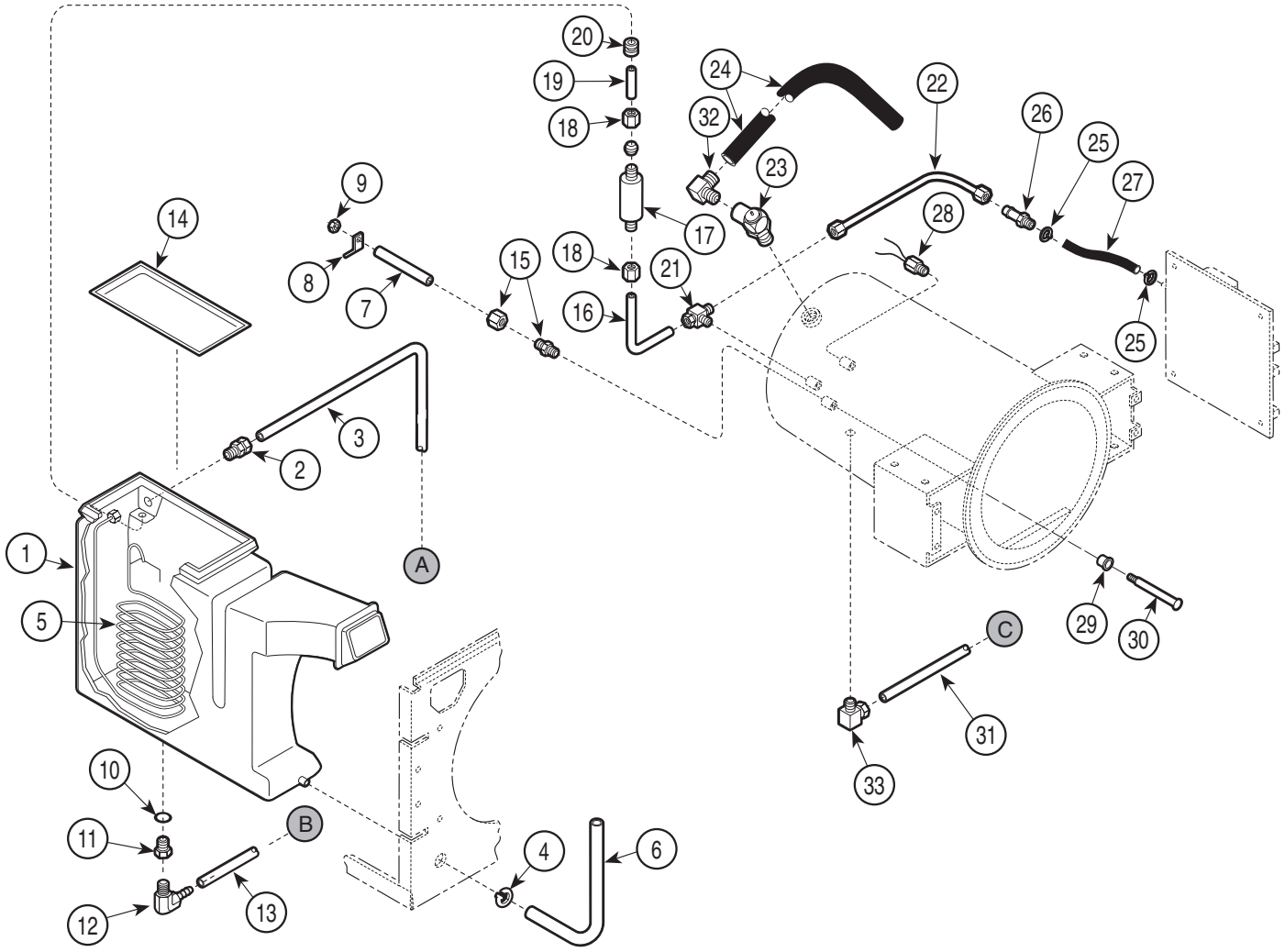
Plumbing & Sensor Components



MA511005

Used on units with Serial Numbers:
ES8309, ET12158, FP1149, FR1413, GB1131, GC1094, GD1103, NP1005 - thru present

Item	Part No.	Description	Qty.
1	*(N.L.A.)*	Condensing Tank (Includes Item 15)	1
2	014-0216-00	Bulkhead Union	1
	014-0392-00	Compression Nut Only	AR
3	014-0251-00	Tube **(M11)**	1
	014-0279-00	Tube **(M11D)**	1
4	016-0748-01	Nylon Hose Clamp	1
5	052-0173-00	Condensing Coil	1
6	053-0391-01	Hose	1
7	002-0358-00	Level Sensor Tube (Includes items 8,9,15,29,and 30)	1
8	015-0595-00	Terminal	1
9	041-0006-02	Locknut	1
10	053-0393-00	O-ring	1
11	014-0209-00	Bulkhead Couple	1
12	014-0348-00	Barb Fitting Elbow	1
13	053-1033-02	Norprene Tube	1
14	*(N.L.A.)*	Condensing Tank Lid (See Item #1)	1
15	014-0212-00	Connector	1
16	014-0252-00	Tube	1
17	002-0654-00	Steam Trap Assembly Kit (Includes Items 16, 18, 19 and 20)	1
18	014-0392-00	Compression Nut (Refer to Kit [*])	2
19	014-0208-00	Tube	1
20	053-0394-02	Grommet	1
21	014-0202-00	Male Branch Tee	1
22	014-0315-00	PCB Pres. Sensor Tube (Refer to Kit [*])	1
23	002-0359-01	Pressure Relief Valve - 40 PSI (Apply Teflon Tape) (Includes Elbow, Item 32)	1
24	053-0613-02	Tube - Pressure Relief	1
25	015-0013-05	Cable Tie (High Temp)	2
26	014-0217-00	Compression Connector (Refer to Kit [*])	1
27	053-0404-05	Tube-PCB Connector (Refer to Kit [*])	1
28	002-0357-00	Temperature Probe Assembly (Apply Teflon Tape)	1
29	053-0407-00	Spacer	1
30	030-0858-00	Level Sensor Assembly	1
31	014-0250-00	Tube	1
32	014-0258-00	Male 90° Elbow	1
33	014-0184-01	Male Elbow	1
[*]	002-0593-00	Pressure Sensor Tube Kit (Includes #'s 18, 22, 25, 26, & 27)	

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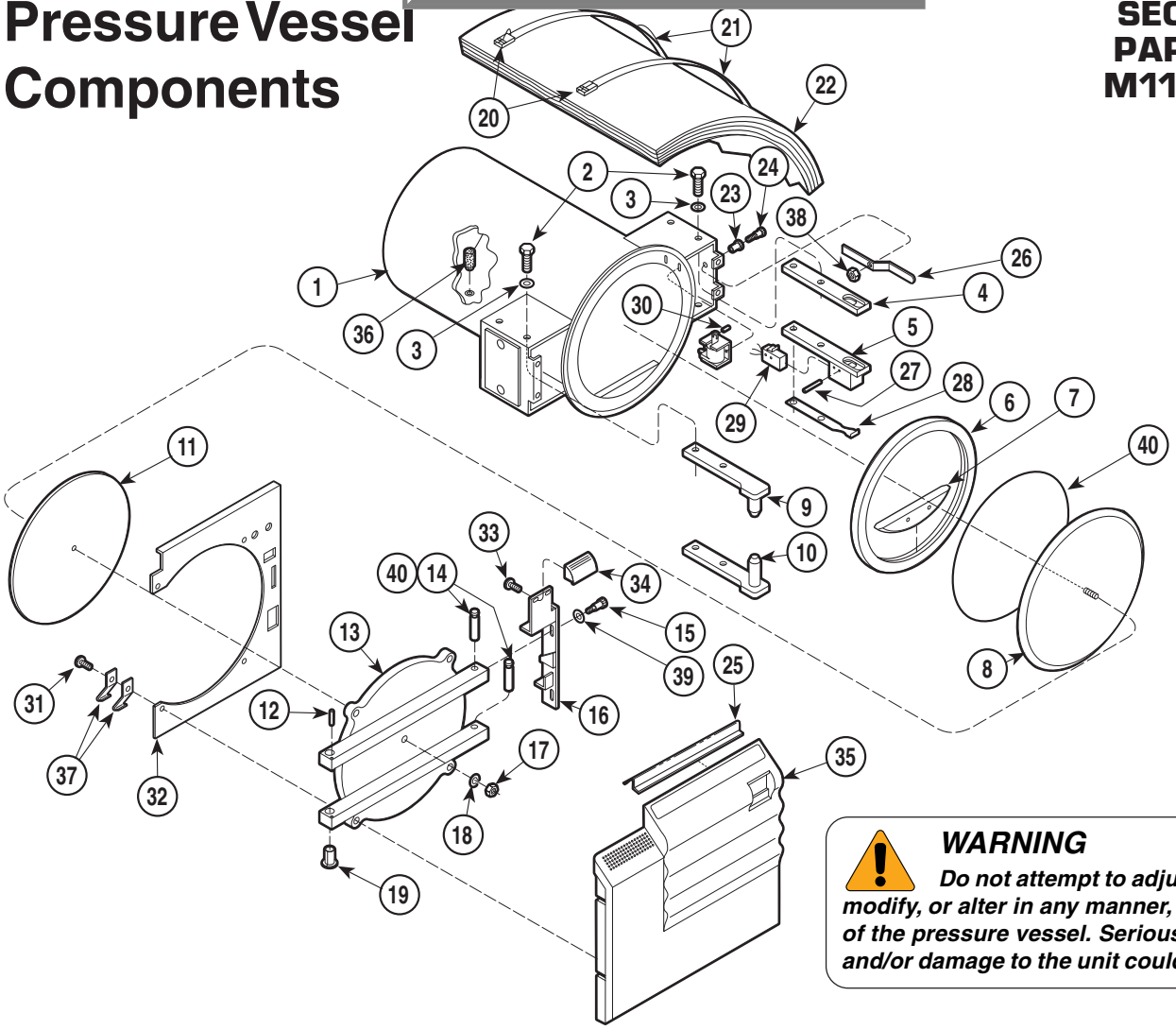
Pressure Vessel Components



WARNING

Do not attempt to adjust, modify, or alter in any manner, any part of the pressure vessel. Serious injury and/or damage to the unit could result.

MA202016

Used on units with Serial Numbers:

ES1000 thru ES4879 ET1000 thru ET6315 FP1000 thru FP1073
FR1000 thru FR1412 GB1000 thru GB1109

Item	Part No.	Description	Qty.
1		Chamber	1
2		Screw	8
3		Washer	12
4		Right Bracket	1
5		Switch Bracket Weldment	1
6	002-0504-00	Door Gasket Kit (Includes item 7)	1
	• 053-0527-00	• Door Gasket	1
	• 053-0784-00	• Dam Gasket	1
7	002-0508-00	Dam Gasket Kit	1
	• 053-0784-00	• Dam Gasket	1
8	030-0879-00	Gasket Housing Weldment	1
9		Top Bracket	1
10		Bottom Bracket	1
11	016-0395-02	Door Insulation Pad	1
12	042-0104-00	Roll Pin	1
13		Door	1
14		Door Bolt	2
15	042-0106-00	Shoulder Screw	2
16	050-4183-00	Latch	1
17	041-0000-00	Nut	1
18	045-0000-00	Lockwasher	1
19		Flange Bearing	2
20	H99387	Aluminum Seal	2
21	H99388-44	Insulation Strap	2
22	*(N.L.A.)*	Insulation Wrapper	1
23	016-0131-18	Flanged Bearing (Not used on M11D)	1
24	042-0106-00	Shoulder Screw (Not used on M11D)	
		[Apply Valve Lubricant #064-0002-00]	1
25	053-0630-01	Steam Block	1
26	050-5192-00	Latch Lever (Not used on M11D)	1
27	042-0001-23	Roll Pin	2
28	050-5245-00	Spring Arm	1
29	002-0362-00	Door Switch (Includes Item 27)	1
30	042-0001-09	Roll Pin (Not used on M11D)	1
31	040-0008-87	Screw	4
32	050-3969-00	Inside Door Cover	1
33	040-0010-75	Screw	2
34	053-0909-00	Door Handle	1
35	002-0506-00	Ritter M11 Door Panel (Incl. Decal)	1
	002-0506-01	Midmark M11 Door Panel (Incl. Decal)	1
	002-0506-04	EMS M11 Door Panel	1
36	002-0360-00	Filter	1
37	050-2347-00	Door Spring	2
38	041-0010-00	Nut	1
39	045-0000-04	Washer	2
40	064-0014-00	Grease	AR
41	057-0790-00	Gasket Ring (Incl. in 002-0504-00 Kit)	1

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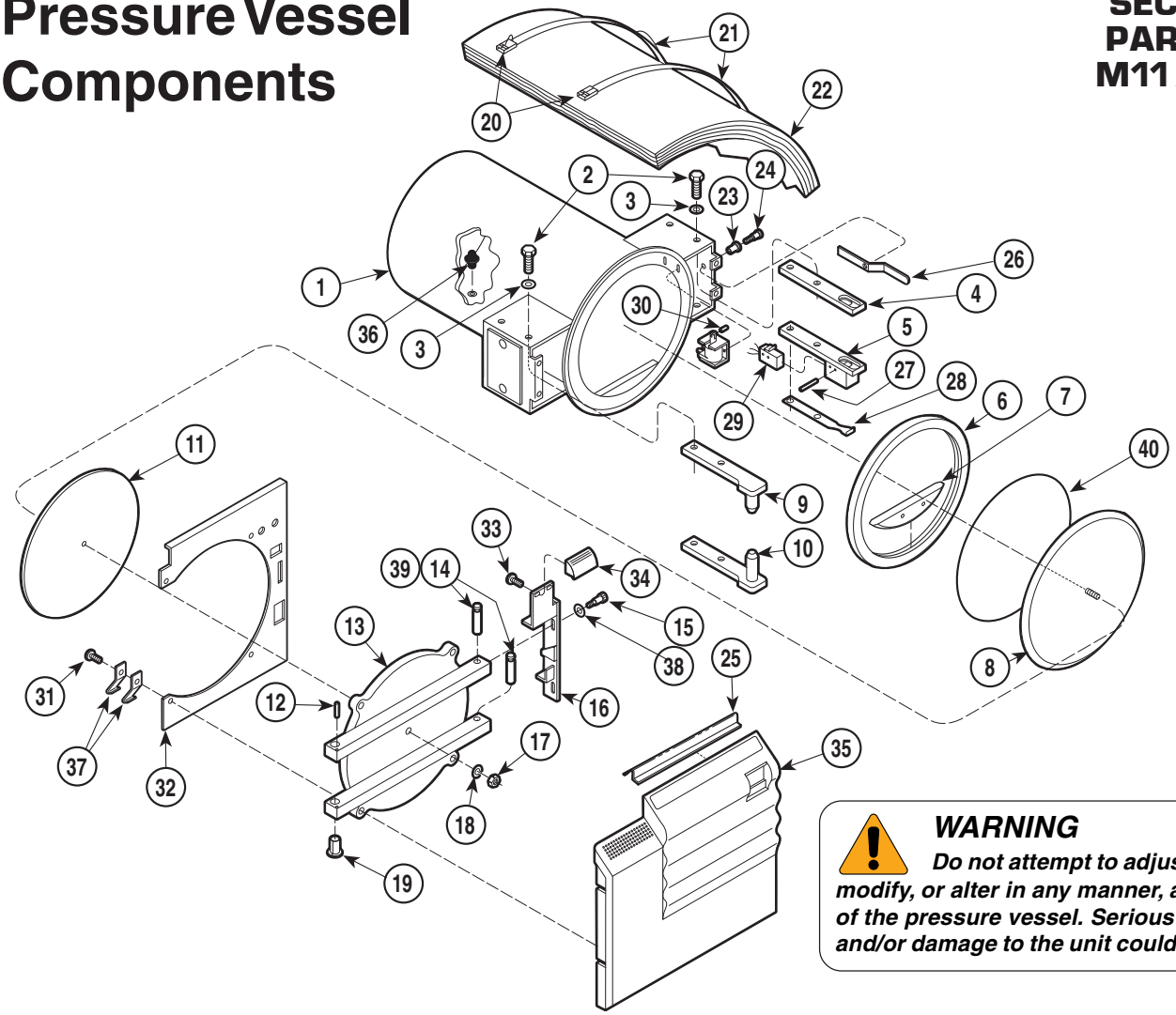
Pressure Vessel Components



WARNING

Do not attempt to adjust, modify, or alter in any manner, any part of the pressure vessel. Serious injury and/or damage to the unit could result.

MA202014

Used on units with Serial Numbers:

ES4880, ET6316, FP1074, FR1204, GB1110, GC1000, GD1000, NP1000 - thru present

Item	Part No.	Description	Qty.
1		Chamber	1
2		Screw	8
3		Washer	12
4		Right Bracket	1
5		Switch Bracket Weldment	1
6	002-0504-00	Door Gasket Kit (Includes item 7)	1
	• 053-0527-00	• Door Gasket	1
	• 053-0904-00	• Dam Gasket	1
7	002-0508-00	Dam Gasket Kit	1
	• 053-0904-00	• Dam Gasket	1
8	030-0879-00	Gasket Housing Weldment	1
9		Top Bracket	1
10		Bottom Bracket	1
11	016-0395-02	Door Insulation Pad	1
12	042-0104-00	Roll Pin	1
13		Door	1
14		Door Bolt	2
15	042-0106-00	Shoulder Screw	2
16	050-4183-00	Latch	1
17	041-0000-00	Nut	1
18	045-0000-00	Lockwasher	1
19		Flange Bearing	2
20	H99387	Aluminum Seal	2
21	H99388-44	Insulation Strap	2
22	*(N.L.A.)*	Insulation Wrapper	1
23	016-0131-18	Flanged Bearing (Not used on M11D)	1
24	042-0106-00	Shoulder Screw (Not used on M11D) (apply lubricant #064-0002-00])	1
25	053-0630-01	Steam Block	1
26	050-5192-00	Latch Lever (Not used on M11D)	1
27	042-0001-23	Roll Pin	2
28	050-5245-00	Spring Arm	1
29	002-0362-00	Door Switch (Includes Item 27)	1
30	042-0001-09	Roll Pin (Not used on M11D)	1
31	040-0008-87	Screw	4
32	050-3969-00	Inside Door Cover	1
33	040-0010-75	Screw	2
34	053-0909-00	Door Handle (M11)	1
	053-0909-01	Door Handle (M11D)	1
35	002-0506-00	Ritter M11 Door Panel (w/ decal)	1
	002-0506-01	Midmark M11 Door Panel (w/ decal)	1
	002-0506-02	M11D Door Panel	1
36	002-0360-00	Filter	1
37	050-2347-00	Door Spring	2
38	045-0000-04	Washer	2
39	064-0014-00	Grease	AR
40	057-0790-00	Gasket Ring (Incl. in 002-0504-00 Kit)	1

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N.L.A. Denotes "No Longer Available

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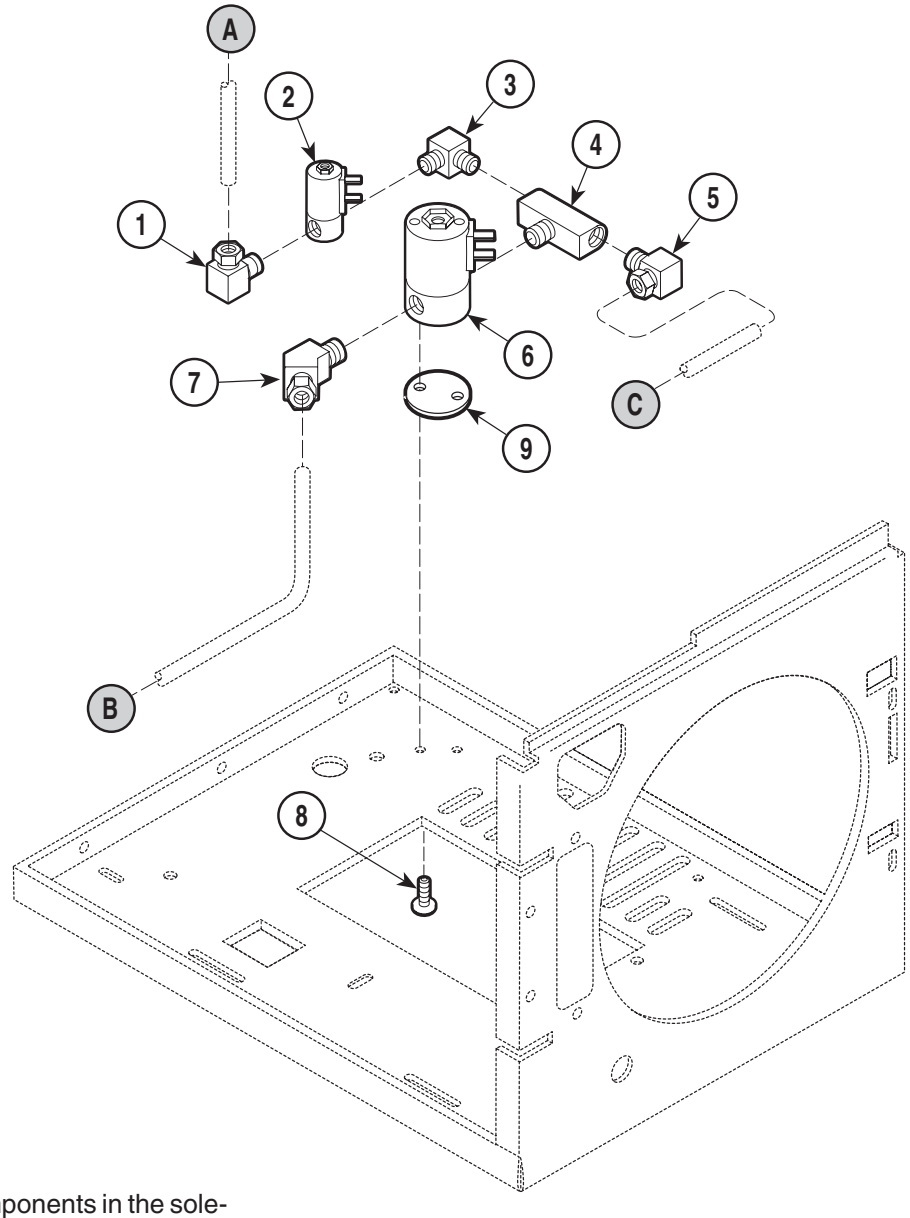
M11 Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so will be marked **FWR**).

MA202201

Used on Units with Serial Numbers
ES1000 thru ES1346 ET1000 thru ET1094

Item	Part No.	Description	Qty.
	029-1271-00	Manifold Assembly (120V/60Hz) (includes items 1 thru 7)	
	029-1271-01	Manifold Assembly (230V/50Hz) (includes items 1 thru 7)	
1	• 014-0184-00	Male 90° Elbow	1
2	• 002-0366-00	Solenoid Valve (120V/60Hz) [Vent]	1
	• 002-0366-01	Solenoid Valve (230V/50Hz) [Vent]	1
	• • 014-0235-03	• Replacement Coil (120V/60Hz)	1
	• • 014-0235-04	• Replacement Plunger	1
3	• 014-0218-01	Male Elbow	1
4	• 014-0234-00	Male Branch Tee	1
5	• 014-0184-01	Male 90° Elbow	1
6	• 002-0365-00	Solenoid Valve (120V/60Hz) [Fill]	1
	• 002-0365-01	Solenoid Valve (230V/50Hz) [Fill]	1
	• • 014-0236-08	• Replacement Coil (120V/60Hz)	1
	• • 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
	• • 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• • 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
7	• 014-0201-00	Male 45° Elbow	1
8	040-0010-74	Screw (Apply Loctite #042-0024-02)	2
9	050-2657-00	Spacer	1

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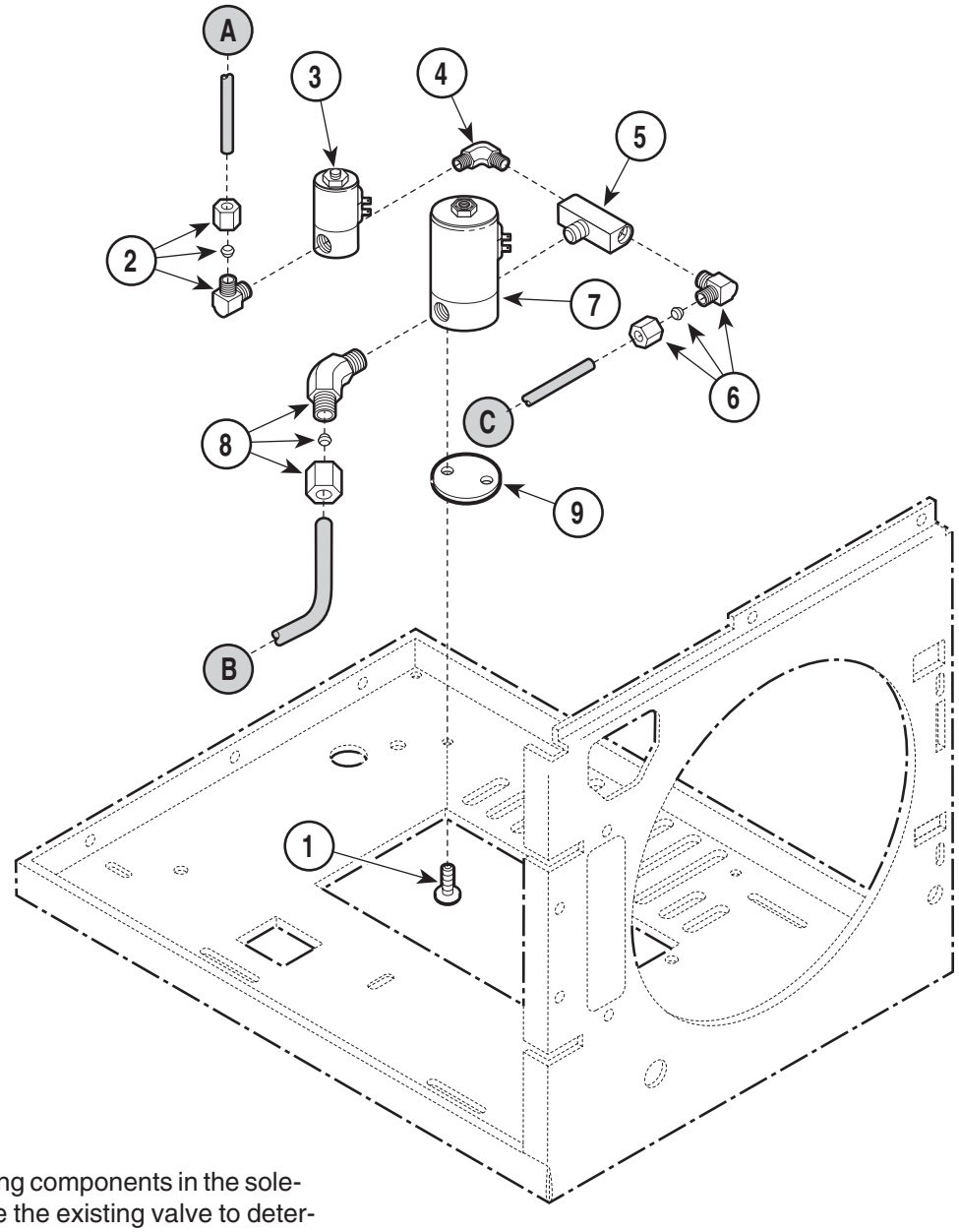
M11 Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA202206

Used on units with Serial Numbers:
ES1347 thru ES5751 ET1095 thru ET7341 FP1000 thru FP1075
FR1000 thru FR1246 GB1000 thru GB1129

Item	Part No.	Description	Qty.
	029-1271-00	Manifold Assembly (120V/60Hz) (includes items 2 thru 8)	
	029-1271-01	Manifold Assembly (230V/50Hz) (includes items 2 thru 8)	
1	040-0010-74	Screw (Apply Loctite #042-0024-02)	2
2	• 014-0184-00	Male 90° Elbow	1
3	• 002-0366-00	Solenoid Valve (120V/60Hz) [Vent]	1
	• 002-0366-01	Solenoid Valve (230V/50Hz) [Vent]	1
	• • 014-0235-03	• Replacement Coil (120V/60Hz)	1
	• • 014-0235-04	• Replacement Plunger	1
4	• 014-0218-01	Male Elbow	1
5	• 014-0234-00	Male Branch Tee	1
6	• 014-0184-01	Male 90° Elbow	1
7	• 002-0365-00	Solenoid Valve (120V/60Hz) [Fill]	1
	• 002-0365-01	Solenoid Valve (230V/50Hz) [Fill]	1
	• • 014-0236-08	• Replacement Coil (120V/60Hz)	1
	• • 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
	• • 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
	• • 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
8	• 014-0201-00	Male 45° Elbow	1
9	050-2657-00	Spacer	1

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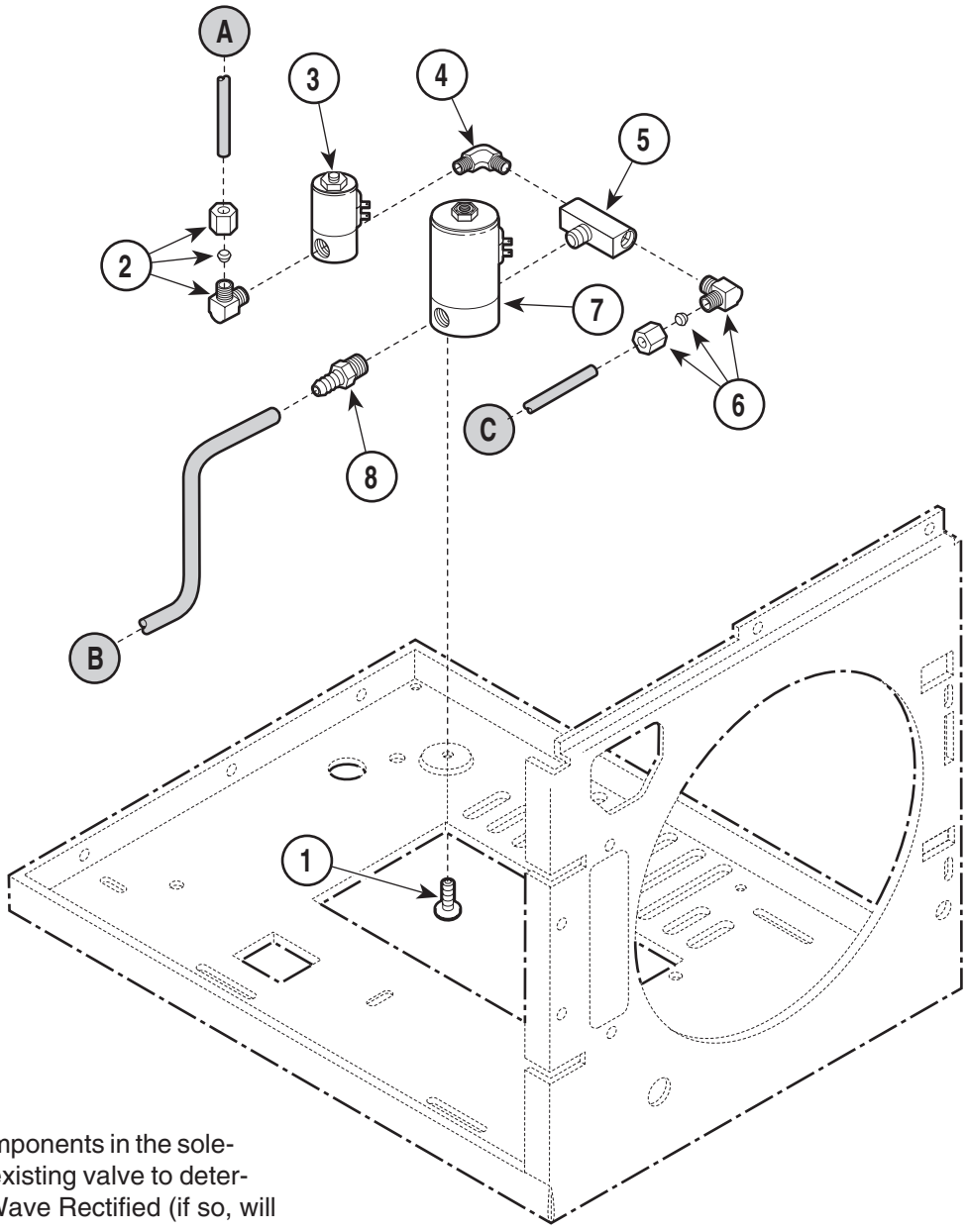
M11 Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA511400

Used on units with Serial Numbers:
ES5752, ET7342, FP1076, FR1247, GB1130, NP1000 - thru present

Item	Part No.	Description	Qty.
	029-1271-00	Manifold Assembly (120V/60Hz) (includes items 2 thru 8)	
	029-1271-01	Manifold Assembly (230V/50Hz) (includes items 2 thru 8)	
1	040-0010-74	Screw (Apply Loctite #042-0024-02)	2
2	• 014-0184-00	Male 90° Elbow	1
3	• 002-0366-00	Solenoid Valve (120V/60Hz) [Vent]	1
	• 002-0366-01	Solenoid Valve (230V/50Hz) [Vent]	1
	• • 014-0235-03	• Replacement Coil (120V/60Hz)	1
	• • 014-0235-04	• Replacement Plunger	1
4	• 014-0218-01	Male Elbow	1
5	• 014-0234-00	Male Branch Tee	1
6	• 014-0184-01	Male 90° Elbow	1
7	• 002-0365-00	Solenoid Valve (120V/60Hz) [Fill]	1
	• 002-0365-01	Solenoid Valve (230V/50Hz) [Fill]	1
	• • 014-0236-08	• Replacement Coil (120V/60Hz)	1
	• • 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
	• • 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• • 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
	• • 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
8	• 014-0347-00	Barb Fitting Elbow	1

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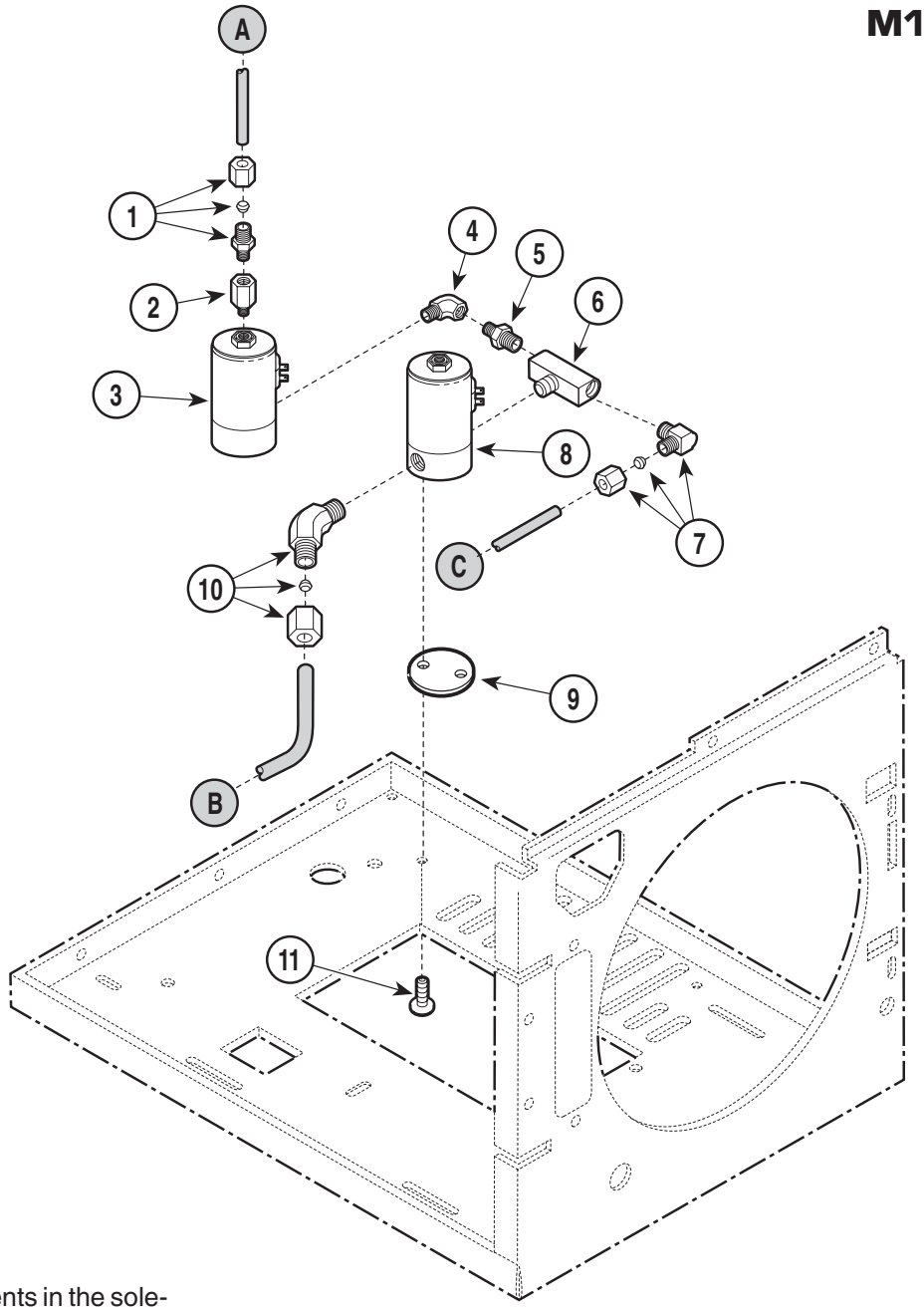
M11D Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA202207

Used on Units with Serial Numbers
GC1000 thru GC1093 GD1000 thru GD1102

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	014-0183-01	Male Connector	1	8	002-0365-00	Solenoid Valve{120V/60Hz}	1
2		Reducer Fitting	1		• 014-0236-08	• Replacement Coil (120V/60Hz)	1
3	002-0519-00	Solenoid Valve {120V/60Hz} (Includes Item 2	1		• 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
	• 014-0275-02	• Replacement Coil & Plunger	1		• 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
4	014-0194-00	Street Elbow	1		• 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
5	014-0276-00	Reducer Nipple	1		• 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
6	014-0234-00	Male Branch Tee	1	9	050-2657-00	Spacer	1
7	014-0184-01	Male 90° Elbow	1	10	014-0201-00	Male 45° Elbow	1
				11	040-0010-74	Screw (Apply Loctite #042-0024-02)	2

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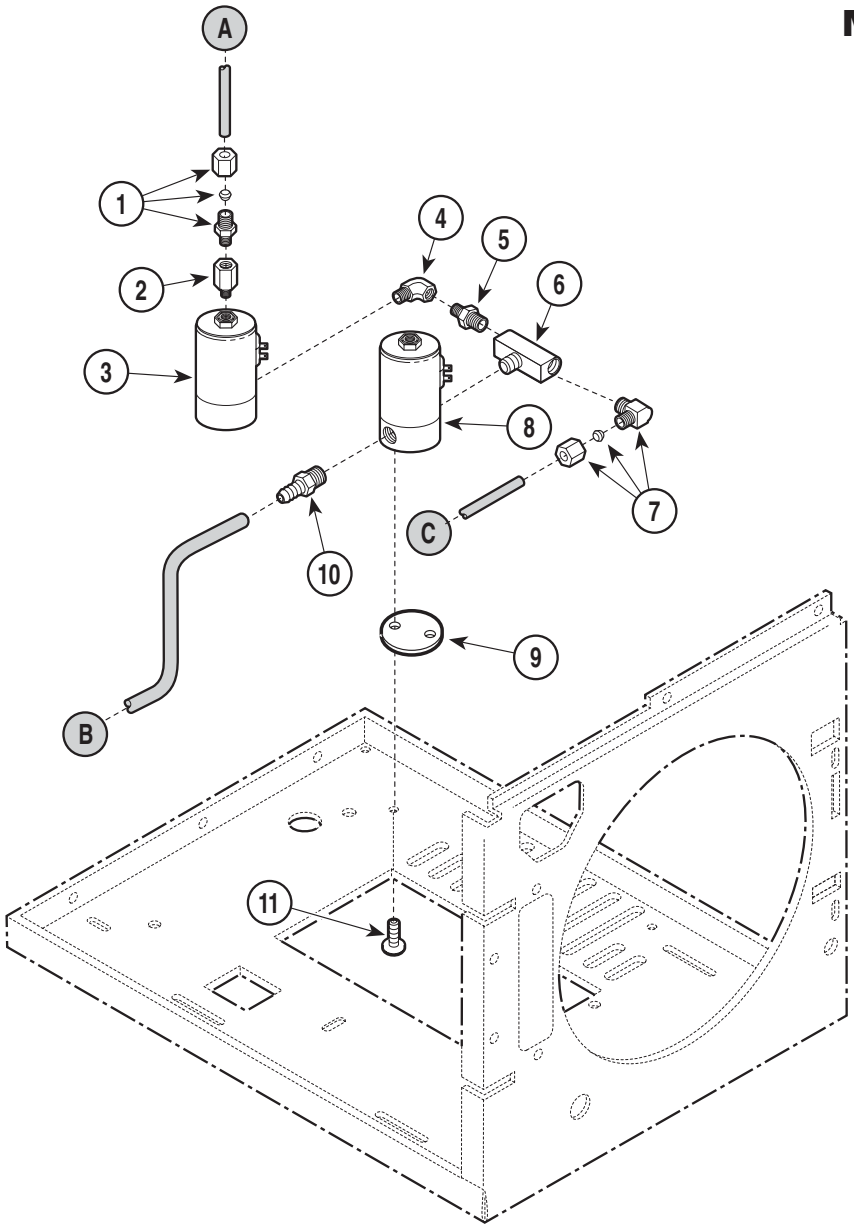
M11D Manifold Components



NOTE

When replacing components in the solenoid, examine the existing valve to determine if it was Full Wave Rectified (if so, will be marked **FWR**).

MA510900

Used on Units with Serial Numbers
GC1094 & GD1103 - thru present

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	014-0183-01	Male Connector	1	8	002-0365-00	Solenoid Valve{120V/60Hz}[Fill]	1
2		Reducer Fitting	1		• 014-0236-08	• Replacement Coil (120V/60Hz)	1
3	002-0519-00	Solenoid Valve {120V/60Hz} [Vent] (Includes Item 2	1		• 014-0236-10	• Replacement Coil (120V/50-60 **FWR**)	1
					• 014-0236-09	• Replmt. Plunger (120V/60Hz)	1
	• 014-0275-02	• Replacement Coil & Plunger	1		• 014-0236-11	• Replmt. Plunger (120V/50-60 **FWR**)	1
4	014-0194-00	Street Elbow	1		• 014-0236-04	• Replacement Plunger	1
5	014-0276-00	Reducer Nipple	1		• 002-0694-00	• Replmt. Plunger & Coil (**FWR**)	1
6	014-0234-00	Male Branch Tee	1	9	050-2657-00	Spacer (Used with Flat Surface Base)	1
7	014-0184-01	Male 90° Elbow	1	10	014-0347-00	Barb Fitting	1
				11	040-0010-74	Screw (Apply Loctite #042-0024-02)	2

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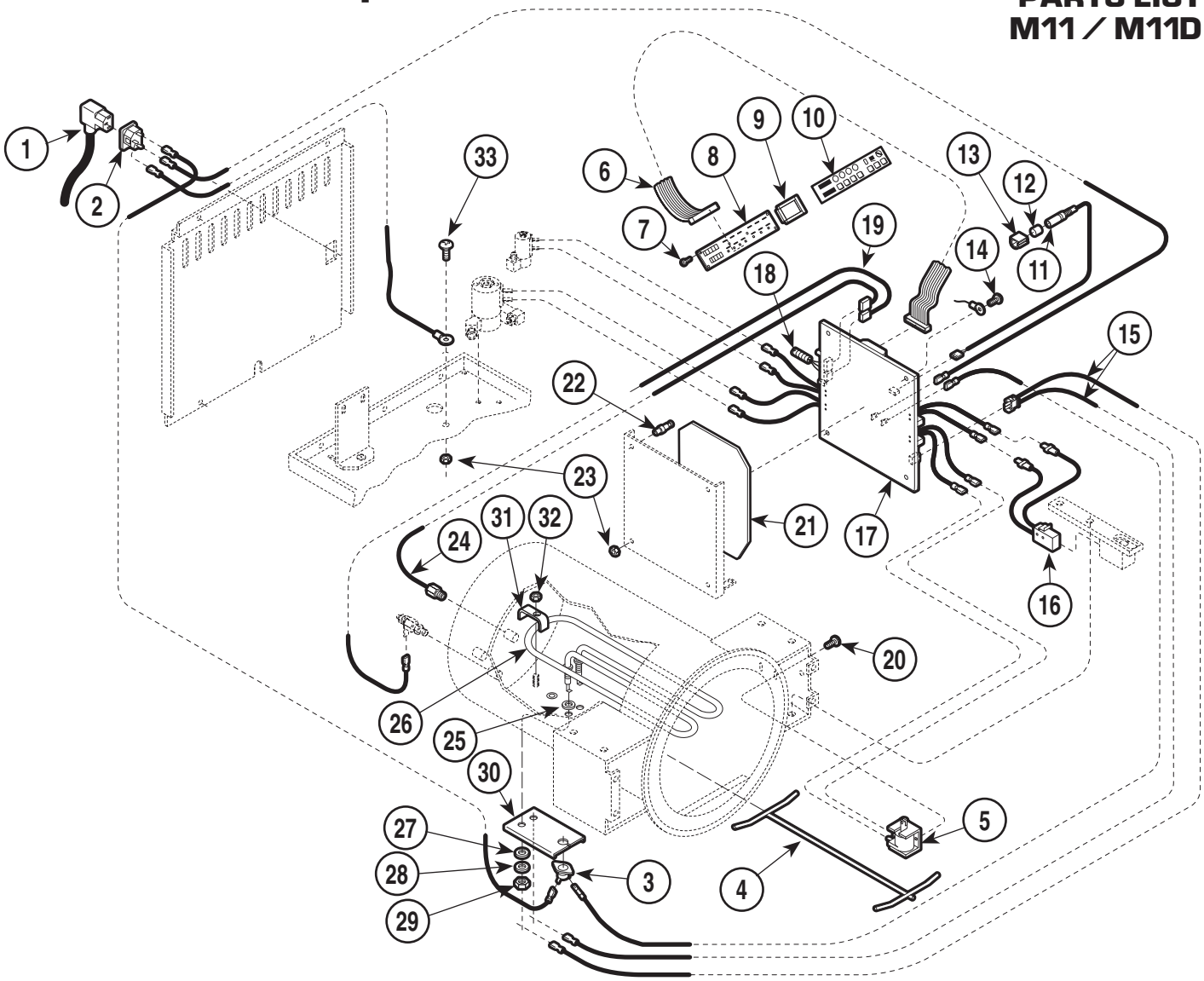
Electrical Components



MA202305

Used on Units with Serial Numbers
ES1000 thru ES1346 ET1000 thru ET1094

Item	Part No.	Description	Qty.
1		Cordset (Refer to W/D in Section 5)	Ref
2	015-0639-00	AC Connector Receptacle	1
3	002-0370-00	Thermostat	1
4	030-0916-00	Spacer Assembly	1
5	002-0363-03	Solenoid-{120V}	1
6	015-0646-00	Ribbon Connector	1
7	040-0006-04	Screw	6
8	002-0369-00	Display PC Board	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	Display Overlay	1
11	015-0978-00	Harness - PCB/Printer	1
12	053-0440-00	Cap Plug	1
13	053-0389-00	Printer Harness Clip	1
14	040-0010-46	Screw	1
15	015-0657-00	PCB/Heater Harness	1
16		Switch Assembly (Refer to "Pressure Vessel Components" Elsewhere)	Ref
17		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
18	015-0257-02	Flex Guard Tubing	1
19	015-0654-00	Chamber Level Sensor Harness	1
20	040-0010-74	Screw	2
21	053-0792-00	Insulator	1
22	053-0295-01	Standoff	3
23	041-0010-04	Locknut	2
24		Temperature Probe Assembly (Refer to "Plumbing & Sensor Components Elsewhere)	Ref
25	H98137	Gasket	2
26	002-0505-00	Heat Element-{120V} (Incl. Gaskets)	1
27	H97971	Washer	2
28	045-0001-56	Lockwasher	2
29		Nut (Included with Item 26)	2
30	H225617	Bracket	1
31	050-3340-00	Heater Bracket	1
32	041-0250-18	Nut	1
33	040-0010-75	Screw	1

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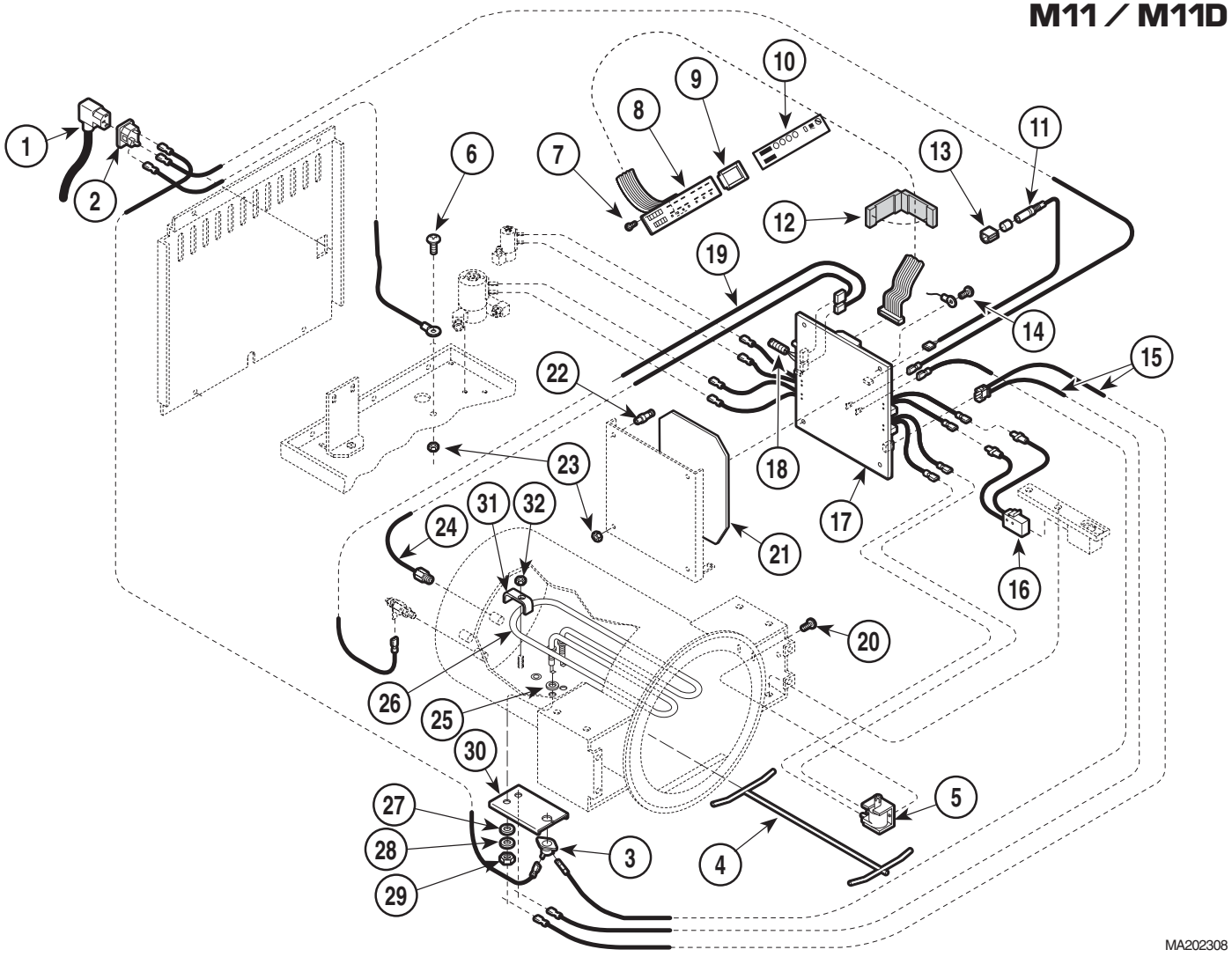
Electrical Components



MA202308

Used on units with Serial Numbers:
ES1347 thru ES3020 ET1095 thru ET3317 GC1000 thru GC1018 GD1000 thru GD1015

Item	Part No.	Description	Qty.
1		Cordset (Refer to W/D in Section 5)	Ref
2	015-0639-00	AC Connector Receptacle	1
3	002-0370-00	Thermostat	1
4	057-0426-00	Spacer Assembly	1
5	002-0363-03	Solenoid-{120V}	1
	002-0363-04	Solenoid-{230V}	1
6	040-0010-75	Screw	1
7	040-0006-04	Screw (Apply Loctite #042-0024-00)	6
8	002-0369-02	Display PC Board	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	**M11** Display Overlay	1
	061-0531-00	**M11D** Display Overlay	1
	061-0272-00	M11 Display Overlay (metric)	1
	061-0272-02	M11 Display Overlay (French)	1
11		Harness - PCB/Printer (Refer to "Printer Components" Elsewhere)	1
12	015-1096-00	Flat Cable EMI Suppression Core (Used On Certain Export Units)	1
13	053-0389-01	Printer Harness Clip	1
14	040-0010-46	Screw	1
15	015-0657-00	PCB/Heater Harness	1
16		Switch Assembly (Refer to "Pressure Vessel Components" Elsewhere)	Ref
17		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
18	015-0257-02	Flex Guard Tubing	1
19	015-0654-00	Chamber Level Sensor Harness	1
20	040-0010-74	Screw	2
21	053-0792-00	Insulator	1
22	053-0295-01	Standoff	3
23	041-0010-04	Locknut	2
24		Temperature Probe Assembly (Refer to "Plumbing & Sensor Components Elsewhere)	Ref
25	H98137	Gasket	2
26	002-0505-00	Heat Element-{120V} (Incl. Gaskets)	1
	002-0505-01	Heat Element-{230V} (Incl. Gaskets)	1
27	H97971	Washer	2
28	045-0001-56	Lockwasher	2
29		Nut (Included with Item 26)	2
30	050-3503-00	Thermostat Bracket	1
31	050-3340-00	Heater Bracket	1
32	041-0250-18	Nut	1

Always Specify Model & Serial Number

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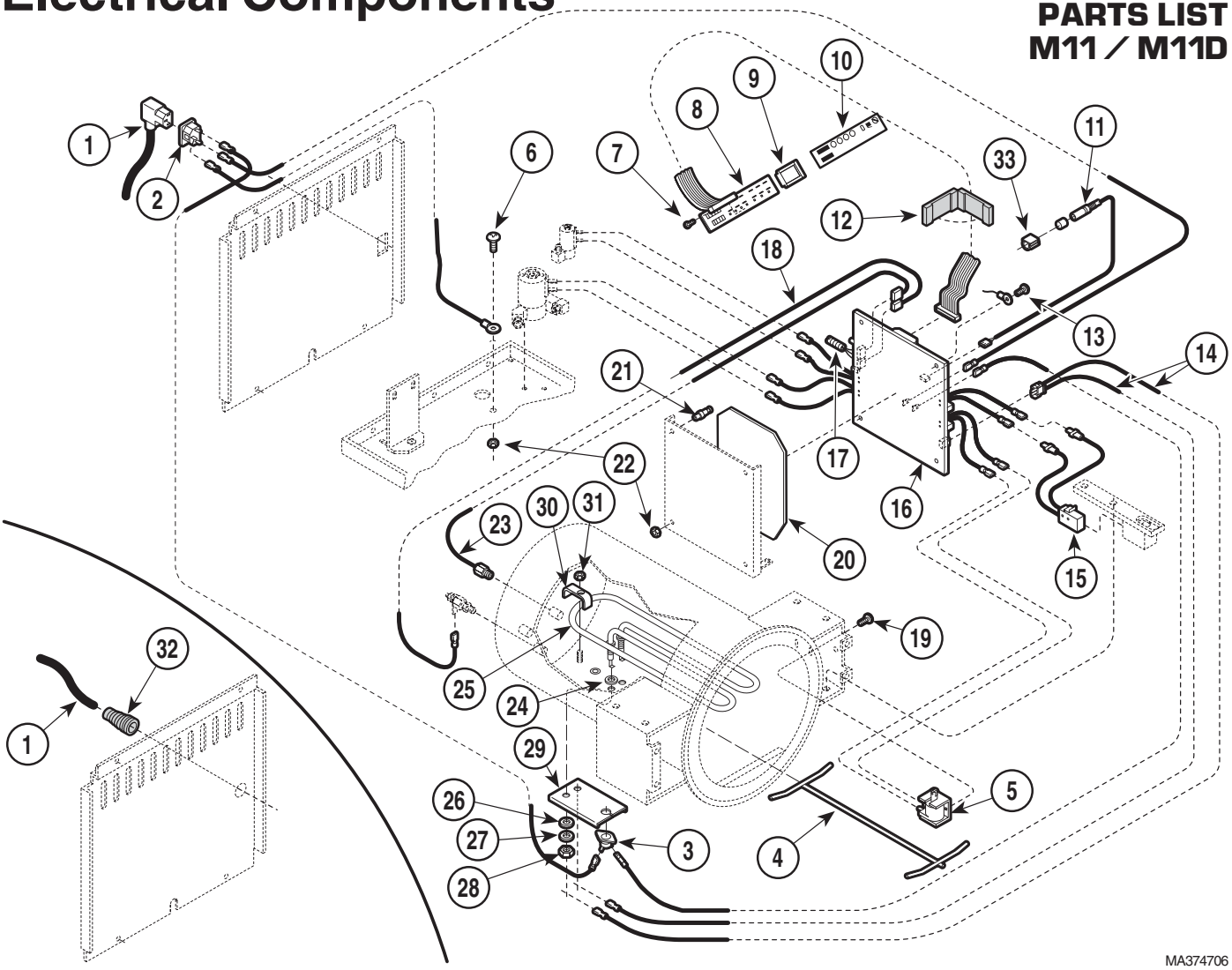
Electrical Components



MA374706

Used on units with Serial Numbers:

ES3021 thru ES7392 ET3318 thru ET10311 FP1000 thru FP1143
FR1000 thru FR1356 GB1000 thru GB1128

Item	Part No.	Description	Qty.
1		Cordset (Refer to W/D in Section 5)	Ref
2	015-0639-00	AC Receptacle (230V. Units Only)	1
3	002-0370-00	Thermostat	1
4	057-0426-00	Spacer Assembly	1
5	002-0363-03	Solenoid-{120V}	1
	002-0363-04	Solenoid-{230V}	1
6	040-0010-75	Screw	1
7	040-0006-04	Screw (Apply Loctite #042-0024-00)	6
8	002-0369-02	Display PC Board	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	M11 Display Overlay	1
	061-0272-00	M11 Display Overlay (metric)	1
	061-0272-02	M11 Display Overlay (French)	1
11		Harness - PCB/Printer (Refer to "Printer Components" Elsewhere)	1
12	015-1096-00	Flat Cable EMI Suppression Core (Used On Certain Export Units)	1
13	040-0010-46	Screw	1
14	015-0657-00	PCB/Heater Harness	1
15		Switch Assembly (Refer to "Pressure Vessel Components" Elsewhere)	Ref
16		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
17	015-0257-02	Flex Guard Tubing	1
18	015-0654-00	Chamber Level Sensor Harness	1
19	040-0010-74	Screw	2
20	053-0792-00	Insulator	1
21	053-0295-01	Standoff	3
22	041-0010-04	Locknut	2
23		Temperature Probe Assembly (Refer to "Plumbing & Sensor Components Elsewhere)	Ref
24	H98137	Gasket	2
25	002-0505-00	Heat Element-{120V} (Incl. Gaskets)	1
	002-0505-01	Heat Element-{230V} (Incl. Gaskets)	1
26	H97971	Washer	2
27	045-0001-56	Lockwasher	2
28		Nut (Included with Item 26)	2
29	050-3503-00	Thermostat Bracket	1
30	050-3340-00	Heater Bracket	1
31	041-0250-18	Nut	1
32	015-1137-00	Strain Relif Bushing (120V. Units Only)	1
33	053-0389-01	Printer Harness Clip	1

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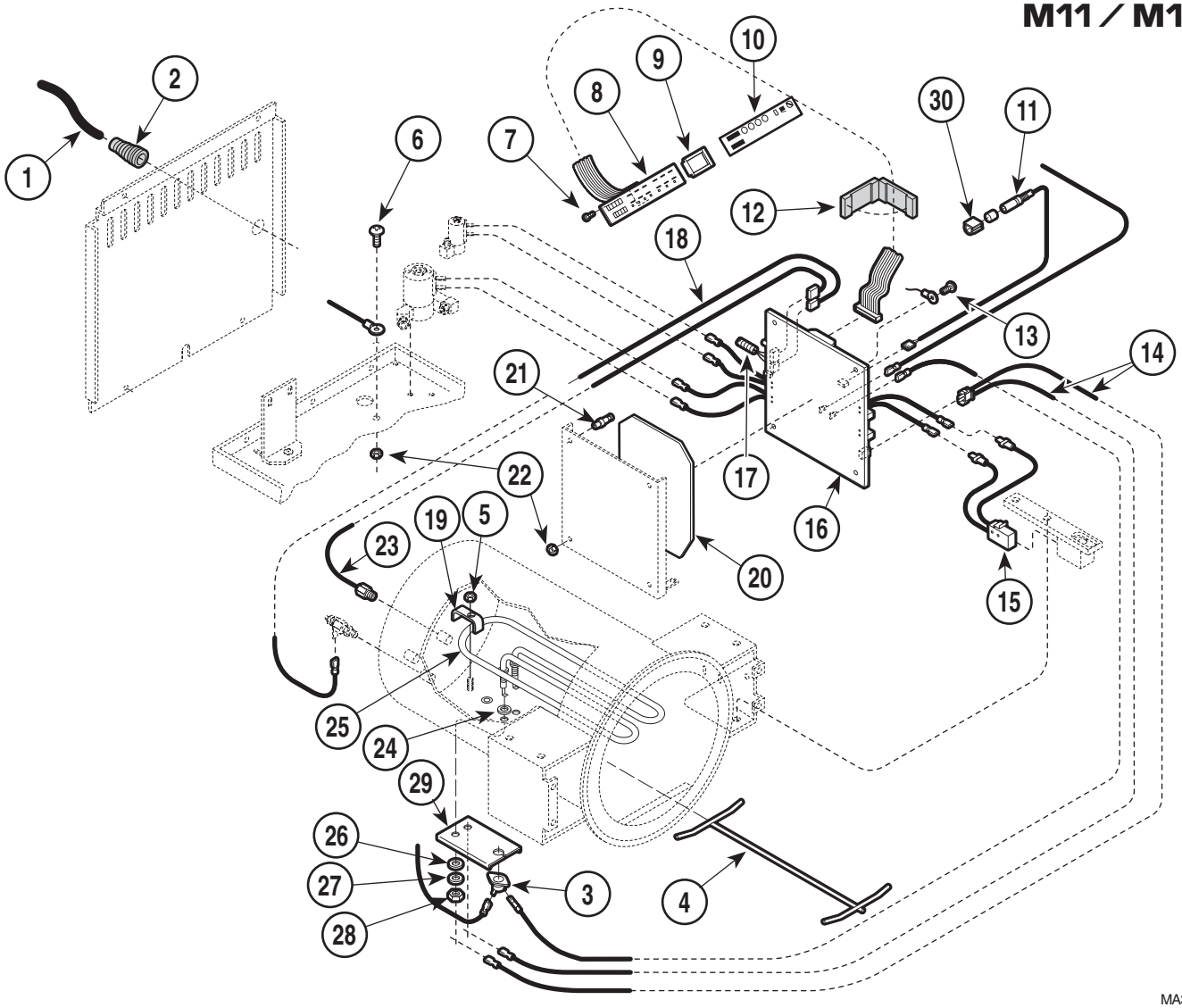
Electrical Components



MA374707

Used on Units with Serial Numbers:
GC1019 thru GC1155 GD1016 thru GD1192

Item	Part No.	Description	Qty.
1		Cordset (Refer to "Wiring Diagrams" in Section 5)	Ref
2	015-1137-00	Strain Relif Bushing	1
3	002-0370-00	Thermostat	1
4	057-0426-00	Spacer Assembly	1
5	041-0250-18	Nut	1
6	040-0010-75	Screw	1
7	040-0006-04	Screw (Apply Loctite #042-0024-00)	6
8	002-0369-02	Display PC Board	1
9	053-0454-00	Display Gasket	1
10	061-0531-00	Display Overlay	1
11		Harness - PCB/Printer (Refer to "Printer Components" Elsewhere)	1
12	015-1096-00	Flat Cable EMI Suppression Core (Used On Certain Export Units)	1
13	040-0010-46	Screw	1
14	015-0657-00	PCB/Heater Harness	1
15		Switch Assembly (Refer to "Pressure Vessel Components" Elsewhere)	Ref
16		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
17	015-1395-00	Flex Guard Tubing	1
18	015-0654-00	Chamber Level Sensor Harness	1
19	050-3340-00	Heater Bracket	1
20	053-0792-00	Insulator	1
21	053-0295-01	Standoff	3
22	041-0010-04	Locknut	2
23		Temperature Probe Assembly (Refer to "Plumbing & Sensor Components Elsewhere)	Ref
24	H98137	Gasket	2
25	002-0505-00	Heat Element (Includes Gaskets)	1
26	H97971	Washer	2
27	045-0001-56	Lockwasher	2
28		Nut (Included with Item 26)	2
29	050-3503-00	Thermostat Bracket	1
30	053-0389-01	Printer Harness Clip	1

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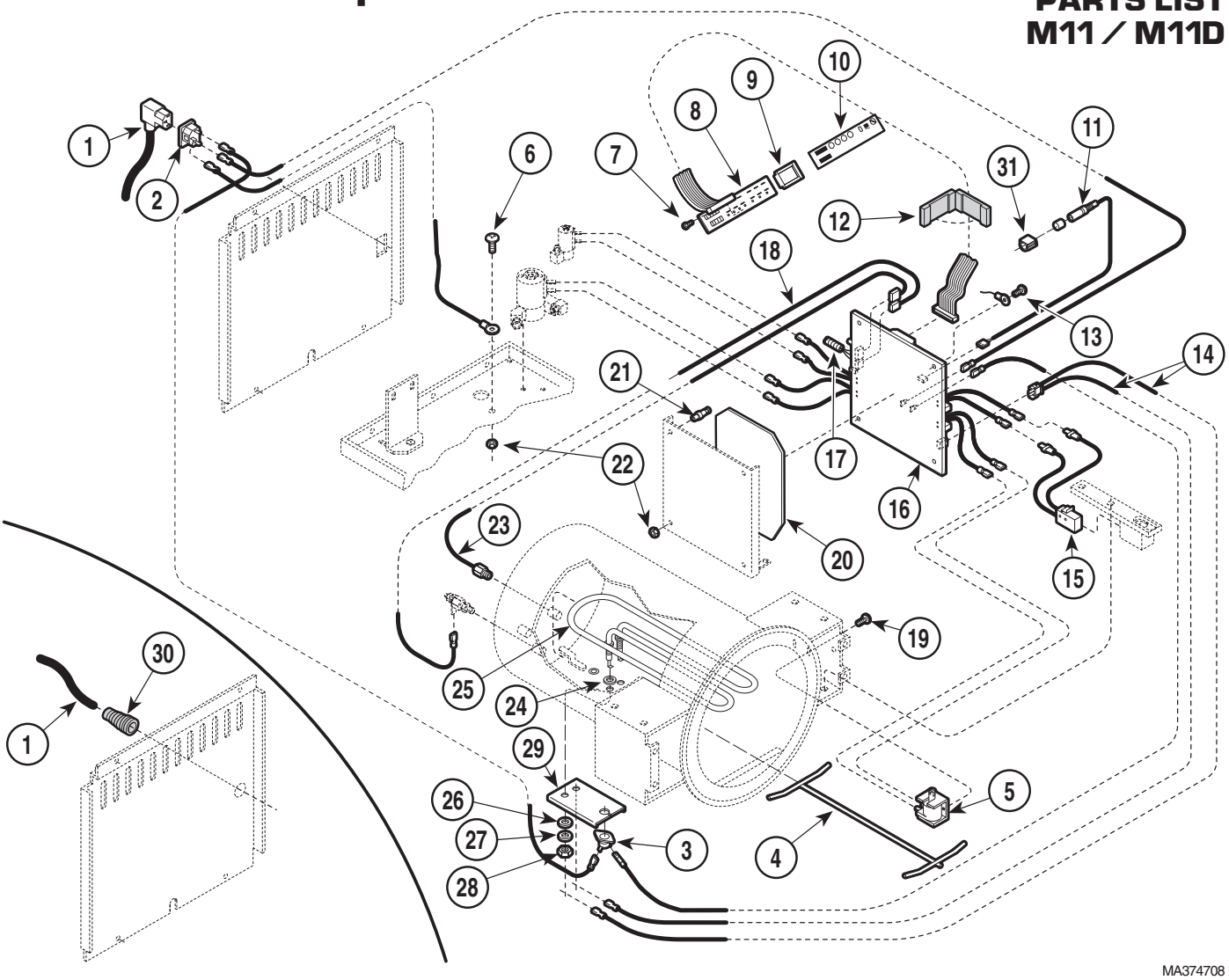
Electrical Components



MA374708

Used on units with Serial Numbers:

ES7393, ET10312, FP1144, FR1357, GB1129, GC1156, GD1193, NP1000 - thru present

Item	Part No.	Description	Qty.
1		Cordset (Refer to W/D in Section 5)	Ref
2	015-0639-00	AC Receptacle (230V. Units Only)	1
3	002-0370-00	Thermostat	1
4	057-0426-00	Spacer Assembly	1
5	002-0363-03	Solenoid-{120V} (M11 only)	1
	002-0363-04	Solenoid-{230V} (M11 only)	1
6	040-0010-75	Screw	1
7	040-0006-04	Screw (Apply Loctite #042-0024-00)	6
8	002-0369-02	Display PC Board	1
9	053-0454-00	Display Gasket	1
10	061-0272-01	**M11** Display Overlay	1
	061-0531-00	**M11D** Display Overlay	1
	061-0272-00	M11 Display Overlay (metric)	1
	061-0272-02	M11 Display Overlay (French)	1
11		Harness - PCB/Printer (Refer to "Printer Components" Elsewhere)	1
12	015-1096-00	Flat Cable EMI Suppression Core (Used On Certain Export Units)	1
13	040-0010-46	Screw	1
14	015-0657-00	PCB/Heater Harness	1
15		Switch Assembly (Refer to "Pressure Vessel Components" Elsewhere)	Ref
16		Control PC Board (Refer to "Control PC Board" Elsewhere)	Ref
17	015-0257-02	Flex Guard Tubing	1
18	015-0654-00	Chamber Level Sensor Harness	1
19	040-0010-74	Screw (M11 only)	2
20	053-0792-00	Insulator	1
21	053-0295-01	Standoff	3
22	041-0010-04	Locknut	2
23		Temperature Probe Assembly (Refer to "Plumbing & Sensor Components Elsewhere)	Ref
24	H98137	Gasket	2
25	002-0505-00	Heat Element-{120V} (Incl. Gaskets)	1
	002-0505-01	Heat Element-{230V} (Incl. Gaskets)	1
26	H97971	Washer	2
27	045-0001-56	Lockwasher	2
28		Nut (Included with Item 26)	2
29	050-3503-00	Thermostat Bracket	1
30	015-1137-00	Strain Relif Bushing (120V. Units Only)	1
31	053-0389-01	Printer Harness Clip	1

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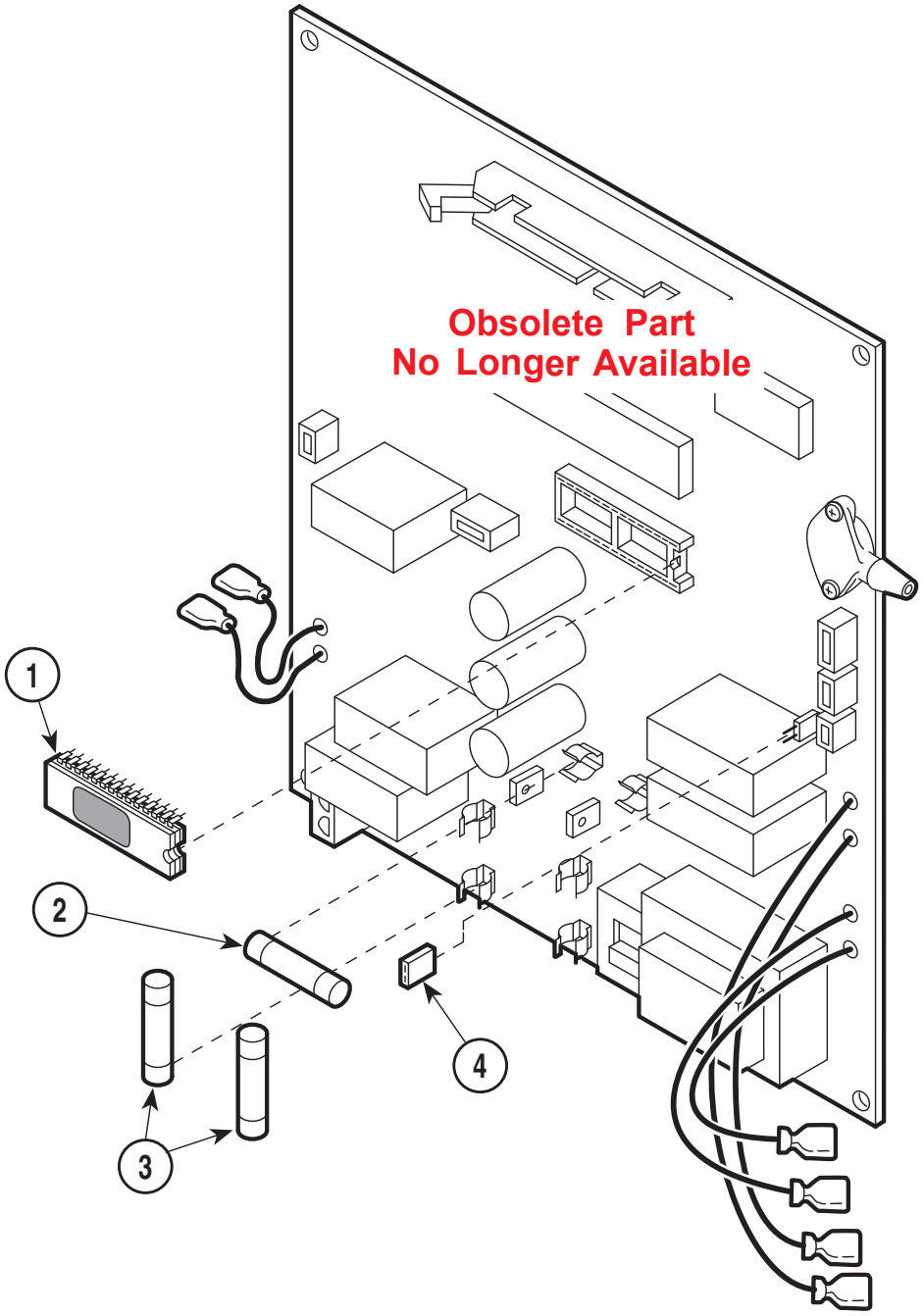
M11 Control PC Board



MA222001

Used on Units with Serial Numbers
ES1000 thru ES1346 ET1000 thru ET1094

Item	Part No.	Description	Qty.
	~~002-0501-00~~	Control PC Board - 115 V (Includes Items 1thru 3)	
		Obsolete Part No Longer Available NA	
1	•	• M11 EPROM	Ref.
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1
3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Units Only}	2
4	•	• 2 Position Jumper	Ref

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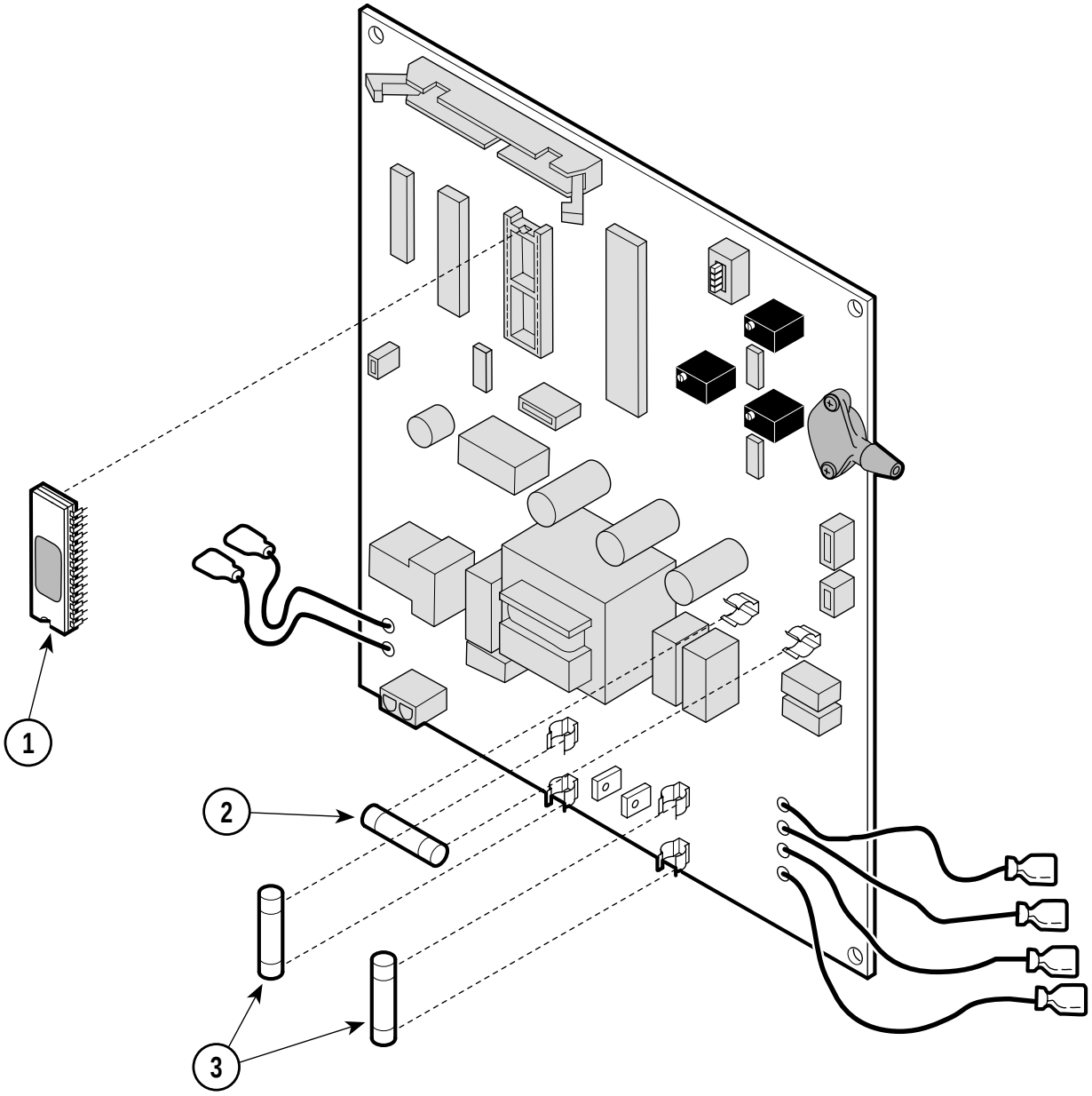
M11 Control PC Board



MA281100

Used on Units with Serial Numbers: GB1000 thru GB1109

Item	Part No.	Description	Qty.
	002-0501-01	M11 Control PC Board {230 V Domestic} (Includes Item 1thru 3)	1
1	•	• M11 EPROM	Ref.
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1
3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Units Only}	2
	• 015-0346-11	• Line Fuse (8 amp/250 V) {Used on 230 V Units Only}	2

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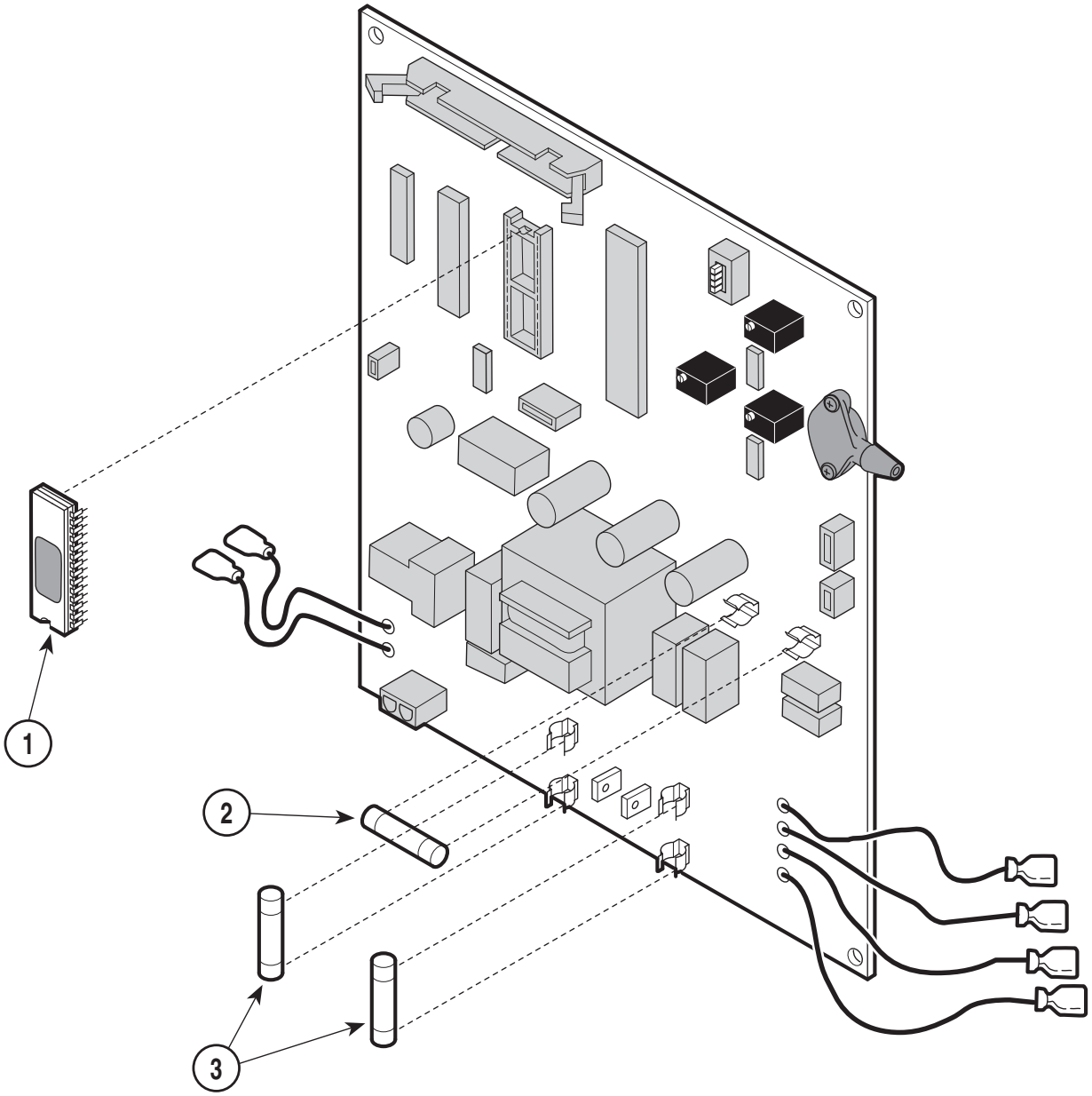
M11 Control PC Board



MA281100

Used on Units with Serial Numbers:
ES1347, ET1095, FP1000, FR1000, GB1110, NP1000 - thru present

Item	Part No.	Description	Qty.
	~~002-0501-00~~	~~M11 Control PC Board {115 V Domestic}~~ **Obsolete Part No Longer Available** [Used on Serial Number Prefix "ES & ET"]	1
	002-0501-01	M11 Control PC Board {230 V Domestic} (Includes Item 1thru 3) [Used on Serial Number Prefix "FP & FR"]	1
	002-0501-03	M11 Control PC Board {230 V Domestic} (Includes Item 1thru 3) [Used on Serial Number Prefix "GB & NP"]	1

Item	Part No.	Description	Qty.
1	•	• M11 EPROM	Ref.
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1
3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Units Only}	2
	• 015-0346-11	• Line Fuse (8 amp/250 V) {Used on 230 V Units Only}	2

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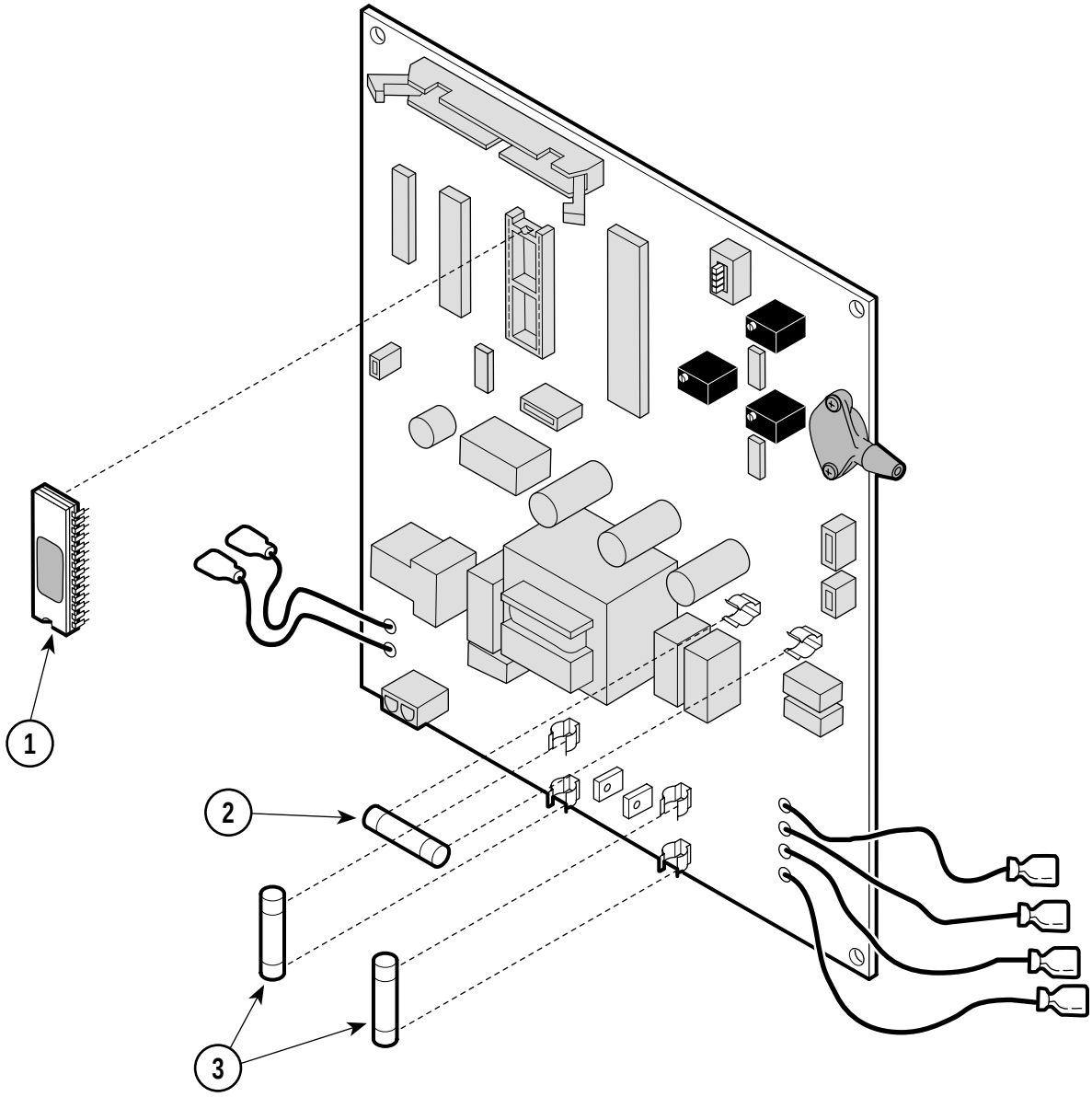
M11D Control PC Board



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
	002-0501-02	M11D Control PC Board {115 V Domestic} (Includes Item 1thru 3)	1	3	• 015-0346-07	• Line Fuse (15 amp/250 V) {Used on 115 V Units Only}	2
1	•	• M11 EPROM	Ref.		• 015-0346-11	• Line Fuse (8 amp/250 V) {Used on 230 V Units Only}	2
2	• 015-0346-08	• Printer Fuse (3 amp/250 V)	1				

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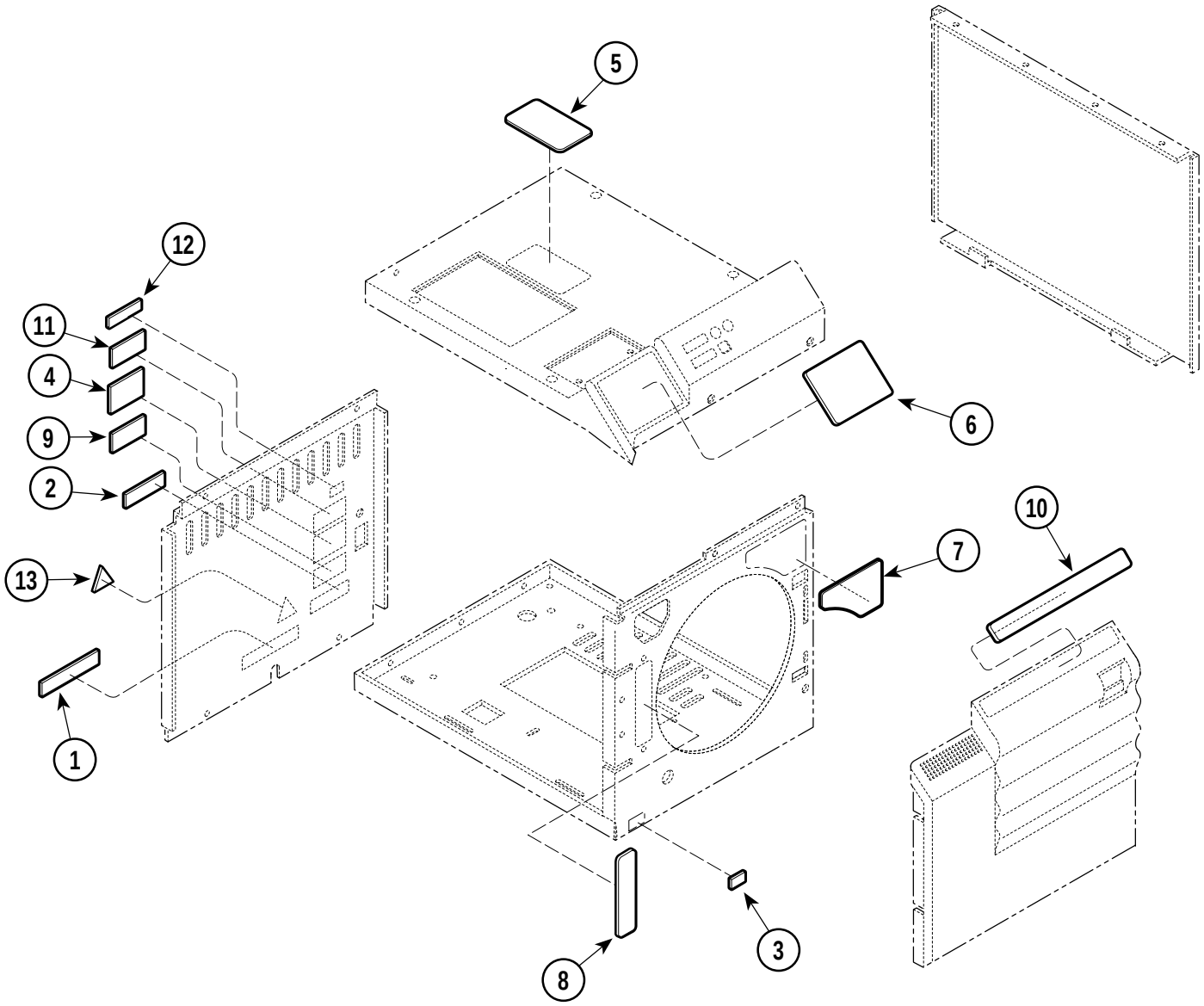
M11 Labels and Decals



MA202512

Item	Part No.	Description	Qty.
1	061-0203-00	Electrical Shock Label (English)	1
	061-0516-00	Electrical Shock Label (French)	1
2	061-0477-00	Patent Label	1
3		Serial Number Label (Front)	1
4		Serial Number Label (Rear)	1
5	061-0309-00	M11 Warning Label P.R. Valve(English)	1
	061-0514-00	M11 Warning Label P.R. Valve(French)	1
6	061-0381-00	M11 Warning Label (English)	1
	061-0512-00	M11 Warning Label (French)	1
7	061-0726-00	Hot Surface Label	1
	061-0515-00	Caution / Hot Label (French)	1
8	061-0311-00	Water Level Label	1
9	061-0624-00	UL/CUL 507U Label (Used on select units only)	1
10	061-0441-00	M11 Operation Label (English)	1
	061-0513-00	M11 Operation Label (French)	1
11	061-0782-00	CE Representative Label (Used on select units only)	1
12	061-0733-00	Label - C.E.	1
13	061-0654-00	Caution Label	1
14	004-0068-00	Laminated Instruction Sheet (Not Shown)	1
15	004-0254-00	Quick Reference Sheet (Not Shown)	1

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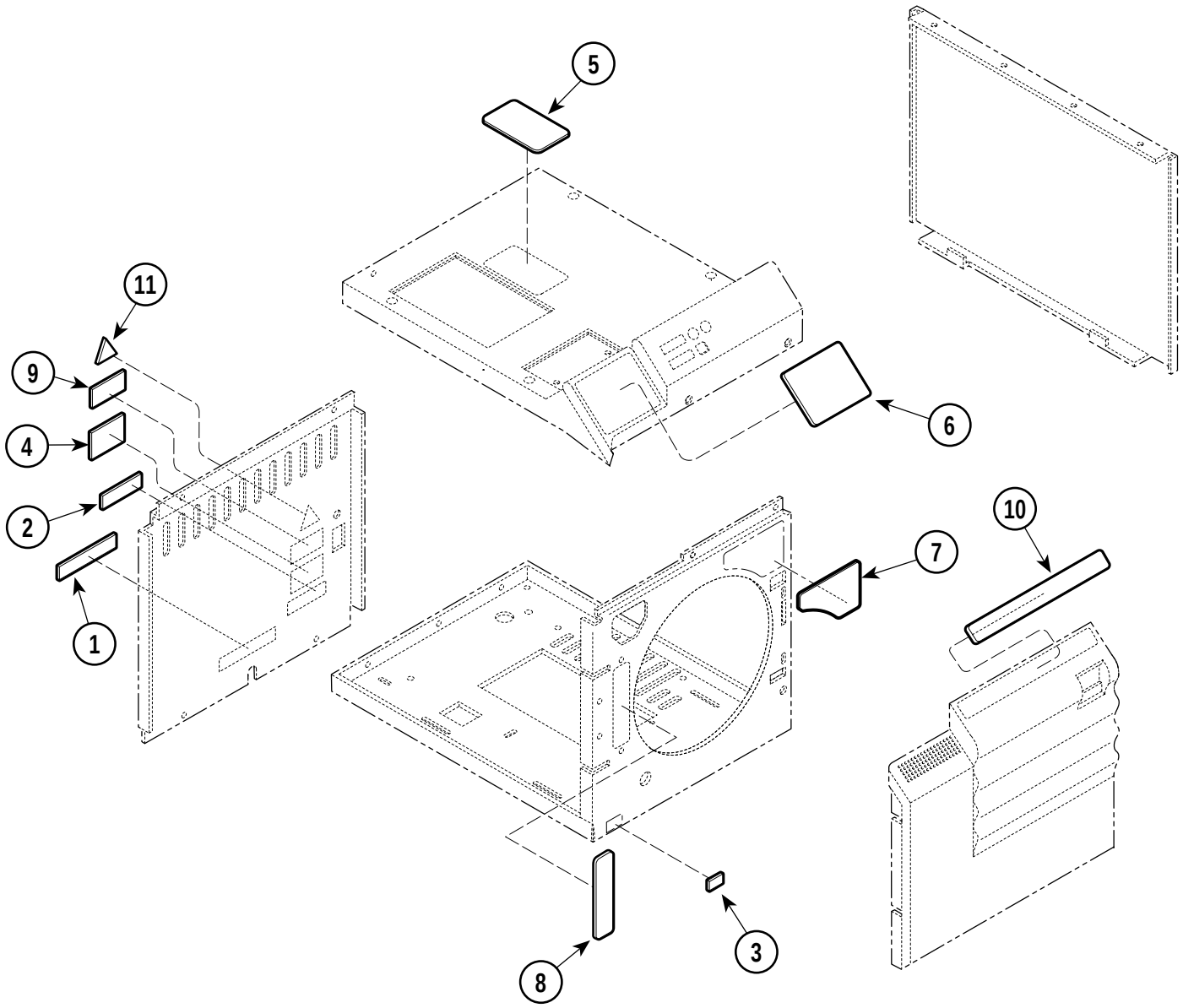
M11D Labels and Decals



MA202511

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	061-0203-00	Electrical Shock Label	1	8	061-0311-00	Water Level Label	1
2	061-0477-00	Patent Label	1	9	061-0624-00	UL/CUL 507U Label	1
3		Serial Number Label (Front)	1	10	061-0533-00	Operation Label	1
4		Serial Number Label (Rear)	1	11	061-0654-00	Caution Label	1
5	061-0309-01	Warning Label P.R. Valve	1	12	004-0068-00	Laminated Instruction Sheet (Not Shown)	1
6	061-0532-00	Warning Label	1	13	004-0254-00	Quick Reference Sheet (Not Shown)	1
7	061-0726-00	Hot Surface Label	1				

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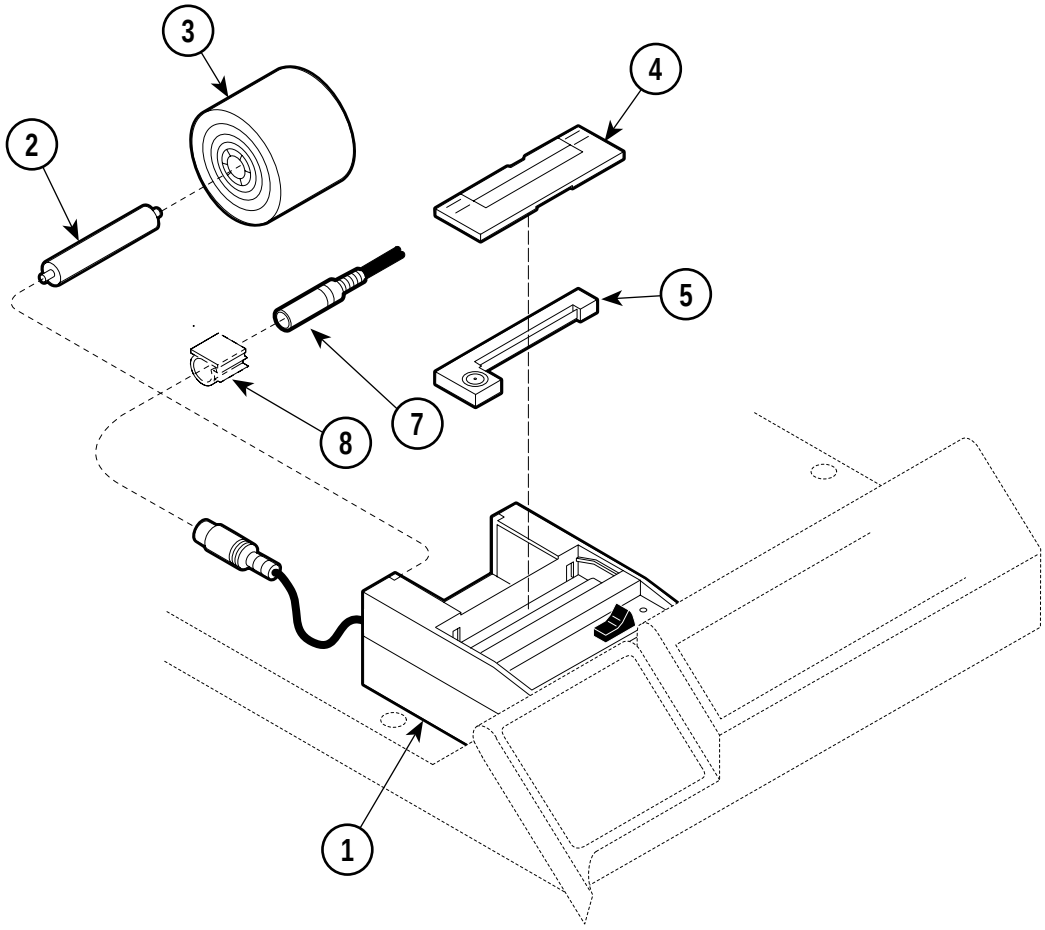
Printer Components



MA203302

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	9A155001	Accessory Printer (Incl. Items 2 thru 7) .	1	6	• 002-0371-00	• Cartridge/Paper Kit (Includes Two Rolls of Paper and One Cartridge	1
2	• 053-0506-00	• Arbor	1				
3	• 060-0008-00	• Paper Roll	1	7	• 015-0978-00	• Printer Wiring Harness	1
4	• 053-0507-00	• Cover	1	8	• 053-0389-01	• Printer Harness Clip	1
5	• 053-0505-00	• Printer Cartridge	1				

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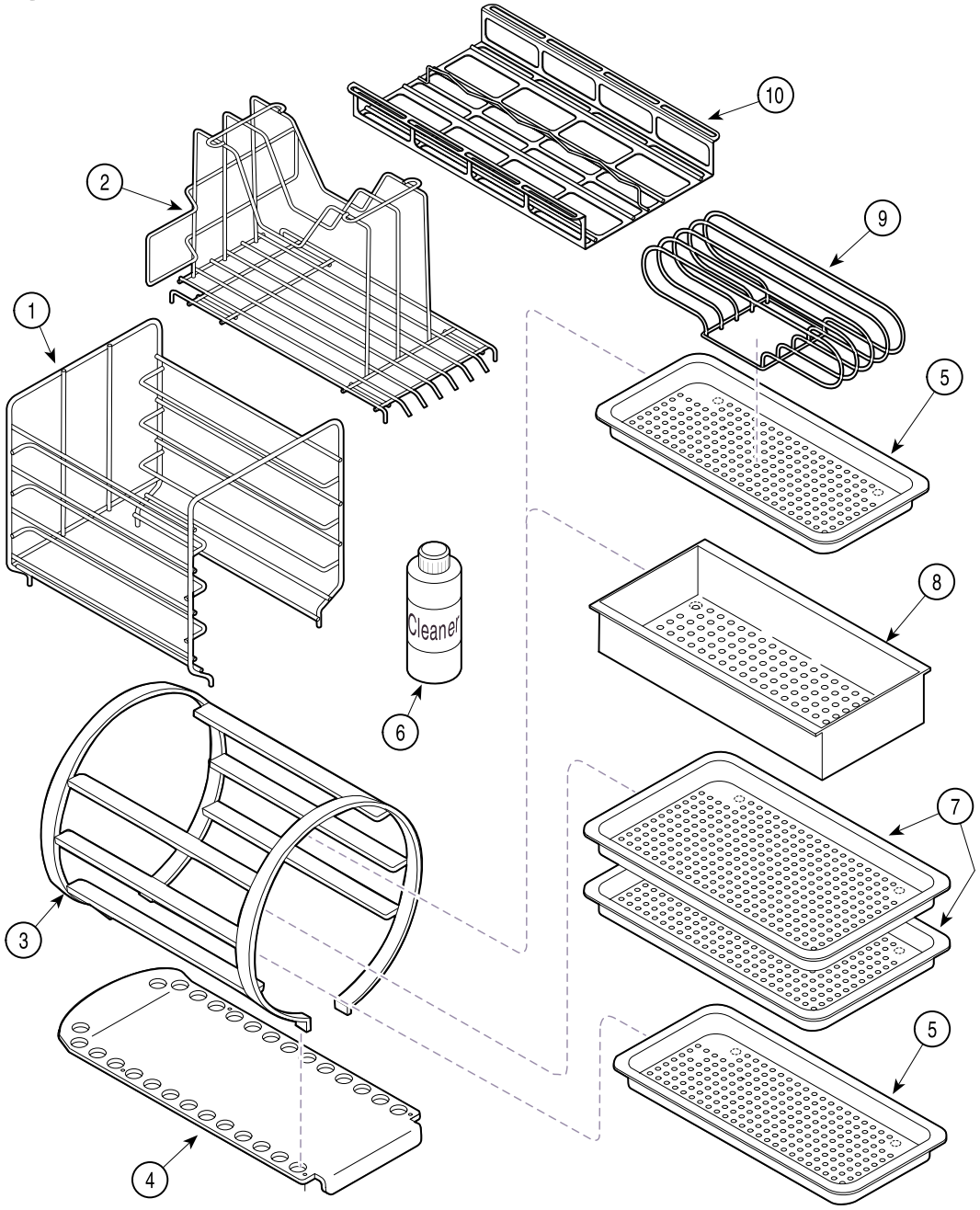
Racks, Trays, and Cleaner



MA203205

Used on units with Serial Numbers:

ES1000 thru ES5001 ET1000 thru ET6434 FP1000 thru FP1073 FR1000 thru FR1204
GB1000 thru GB1109 GC1000 thru GC1074 GD1000 thru GD1068

Item	Part No.	Description	Qty.
1	9A215001	M11 Horizontal Cassette Rack Acces. ..	1
2	9A215002	M11 Vertical Cassette Rack Acces.	1
3	050-3920-00	Wire Tray Rack	1
4	050-3919-00	Tray Plate	1
5	050-2644-00	Small Tray	2
6	002-0269-00	Sterilizer Cleaner-Ritter (Single Bottle with M.S.D.Sheet)	AR
	002-0269-01	Sterilizer Cleaner-Ritter (12 Bottle Case with M.S.D.Sheet)	AR
	002-0396-00	Sterilizer Cleaner-Midmark (Single Bottle with M.S.D.Sheet)	AR
	002-0396-01	Sterilizer Cleaner-Midmark (12 Bottle Case with M.S.D.Sheet)	AR
7	050-2643-00	Large Tray	2
8	9A225001	Sterilizer Deep Tray	1
9	9A226001	Sterilizer Pouch Rack	1
10	9A306001	Large Casette Tray	1

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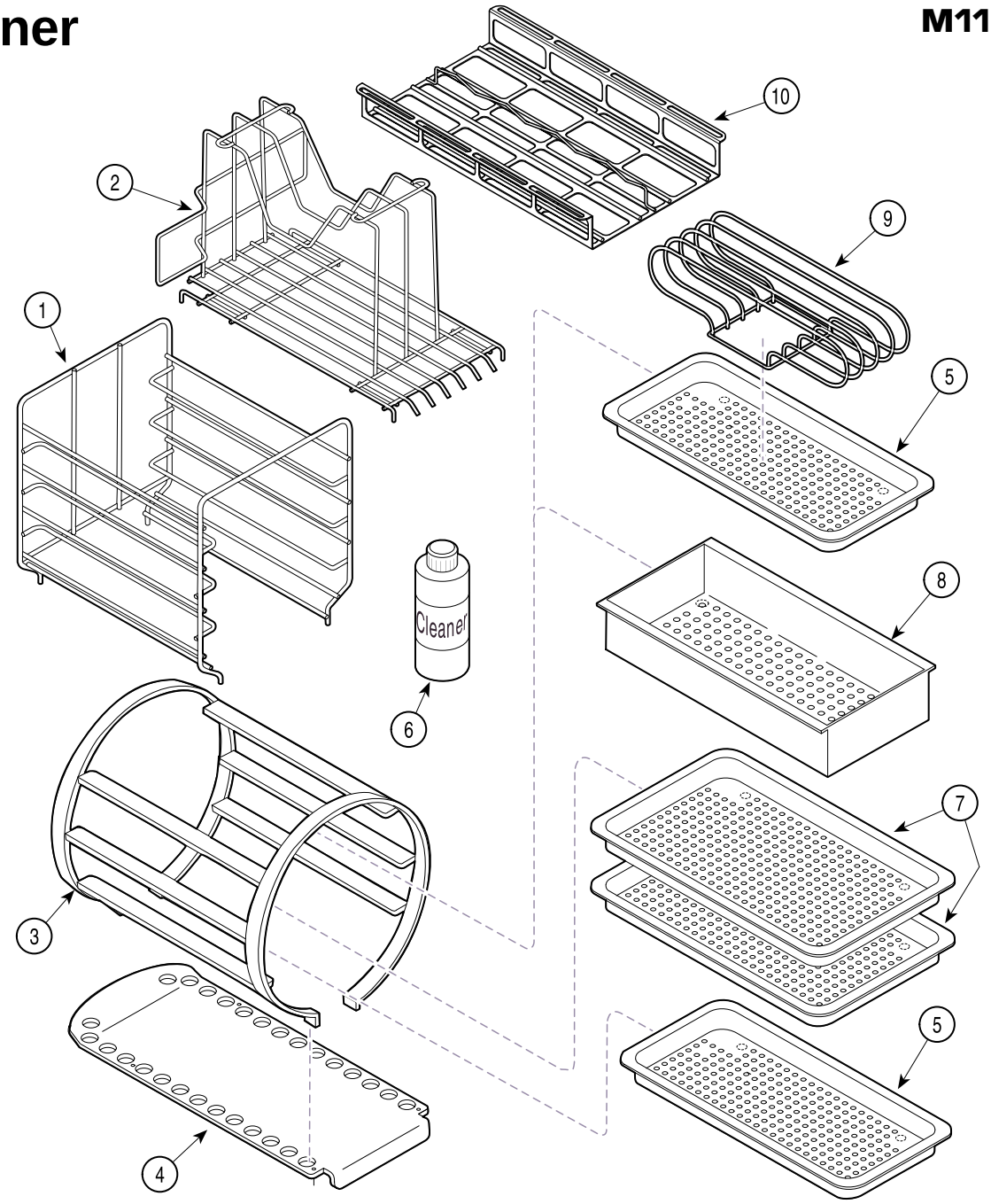
Racks, Trays, and Cleaner



Used on units with Serial Numbers:
ES5002, ET6435, FP1074, FR1205, GB1110, GC1075, GD1069 - thru present

Item	Part No.	Description	Qty.
1	9A215001	M11 Horizontal Cassette Rack Acces. ..	1
2	9A215002	M11 Vertical Cassette Rack Acces.	1
3	050-3920-00	Wire Tray Rack	1
4	050-3919-00	Tray Plate	1
5	050-4260-00	Small Tray	2
6	002-0269-00	Sterilizer Cleaner-Ritter (Single Bottle with M.S.D.Sheet)	AR
	002-0269-01	Sterilizer Cleaner-Ritter (12 Bottle Case with M.S.D.Sheet)	AR
	002-0396-00	Sterilizer Cleaner-Midmark (Single Bottle with M.S.D.Sheet)	AR
	002-0396-01	Sterilizer Cleaner-Midmark (12 Bottle Case with M.S.D.Sheet)	AR
7	050-4259-00	Large Tray	2
8	9A225001	Sterilizer Deep Tray	1
9	9A226001	Sterilizer Pouch Rack	1
10	9A306001	Large Casette Tray	1

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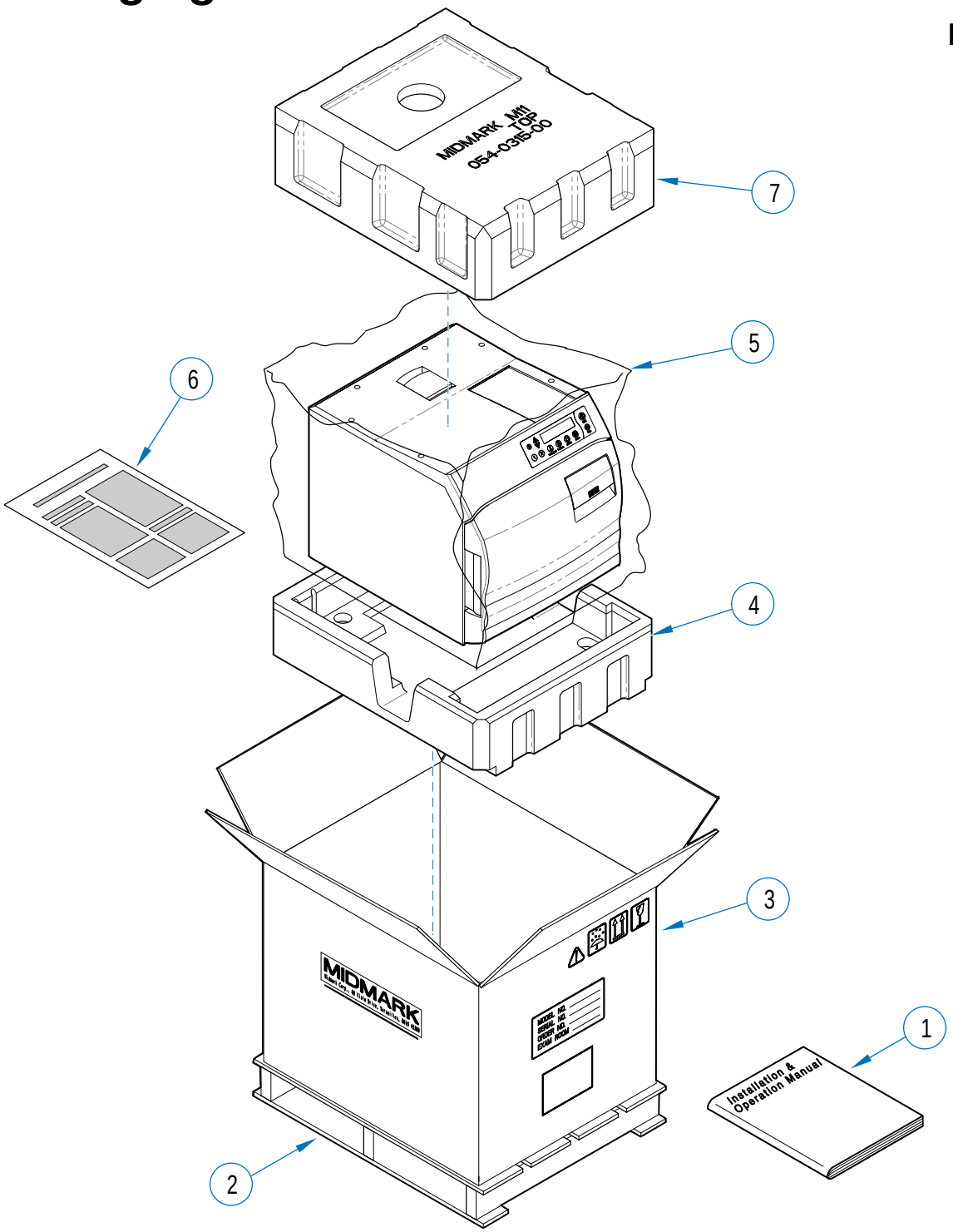
Packaging



MA202405

Item	Part No.	Description	Qty.
1	003-1030-00	M11 Installation & Operation Manual	1
	003-1032-00	M11D Installation & Operation Manual	1
2	063-9983-00	Skid	1
3	066-0844-00	Cardboard Box	1
4	054-0317-00	Bottom Pad (includes item 7)	1
5	053-0061-01	Poly Bag	1
6	077-0033-00	Speed Clean Material Data Safety Sheet	1
7	054-0317-00	Top Pad (includes item 4)	1
8a	061-0719-00	Label, Midmark (Not Shown)	2
8b	061-0719-01	Label, Ritter (Not Shown)	2
8c	061-0719-02	Label, EMS (Not Shown)	2
	002-0531-00	Packaging Kit - Ritter (incl. items 2,3,4,5,6,7, 8b)	Ref
	002-0531-01	Packaging Kit - Midmark (incl. items 2,3,4,5,6,7, 8a)	Ref

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Description of Error or Desired Change:

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FAX ORDERING FORM

(SERVICE PARTS ONLY)

NOTES:

- **ALL BLOCKED AREAS MUST BE COMPLETED.**
- **USE FOR NON-WARRANTY FAX ORDERS ONLY. WARRANTY ORDERS MUST BE TELEPHONED IN (1-800-MIDMARK).**

ATTENTION: SERVICE DEPARTMENT FAX#: 877-249-1793

ACCT #: _____ **P.O. #:** _____ **DATE:** _____

NAME: _____ **SHIP TO:** _____

ADDRESS: _____

CITY, ST.: _____

CONTACT: _____

PHONE: _____

☐ **NON-EMERGENCY ORDER - TO SHIP WITHIN 72 HOURS IF PART(S) IN STOCK.**

☐ **EMERGENCY ORDER - TO SHIP WITHIN 24 HOURS IF PART(S) IN STOCK (IF ORDER IS RECEIVED BEFORE 1:00 P.M. E.S.T).**

SEND NOTIFICATION IF PARTS ARE NOT AVAILABLE TO SHIP WITHIN 24 HOURS VIA E-MAIL OR FAX TO: _____

METHOD OF SHIPMENT

OTHER _____

UPS	FED EX
☐ NEXT DAY A.M.	☐ NEXT DAY A.M.
☐ NEXT DAY P.M.	☐ NEXT DAY P.M.
☐ 2ND DAY	☐ 2ND DAY
☐ GROUND	☐ ECONOMY

QTY.	PART #	DESCRIPTION (SPECIFY COLOR OF ITEM IF APPLICABLE)	COLOR CODE	PRICE/PER

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60 Vista Drive
P.O. Box 286
Versailles, Ohio 45380-0286
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